

E COPY

IN THE

Supreme Court of the United States

October Term, 1971

Nos. 71-827 and

HUGHES TOOL COMPANY and
RAYMOND M. HOLLIDAY,
Petitioners,

v.

TRANS WORLD AIRLINES, INC.,
Respondent.

TRANS WORLD AIRLINES, INC.,
Cross-Petitioner,

v.

HUGHES TOOL COMPANY and
RAYMOND M. HOLLIDAY,
Respondents.

APPENDIX TO CONDITIONAL CROSS-PETITION FOR
A WRIT OF CERTIORARI TO THE UNITED STATES
COURT OF APPEALS FOR THE SECOND CIRCUIT

AND

SUPPLEMENTAL APPENDIX TO ACCOMPANY BRIEF
IN OPPOSITION

Explanatory Note

The Report and Award of Hon. Herbert Brownell, Special Master (the "Brownell Report"), was filed herein with the United States District Court for the Southern District of New York in printed form on September 21, 1968. A copy of the original 323-page Brownell Report was bound into the Joint Appendix filed with the United States Court of Appeals for the Second Circuit on the appeals to that Court, and in both courts below references were made to the original pagination of the printed Brownell Report. Cross-Petitioner and Respondent Trans World Airlines, Inc. ("TWA") is filing the Brownell Report in this Court, in the form in which it was originally submitted to the District Court in 1968, as an Appendix to TWA's own Conditional Cross-Petition for a Writ of Certiorari in No. _____ and to supplement the Appendix filed by Petitioners and Respondents Hughes Tool Company and Raymond M. Holliday with their Petition in No. 7/-827.

United States District Court

SOUTHERN DISTRICT OF NEW YORK

61 Civ. 2324

TRANS WORLD AIRLINES, INC.,

Plaintiff,

—against—

**HOWARD R. HUGHES, HUGHES TOOL COMPANY, and
RAYMOND M. HOLLIDAY,**

Defendants.

**REPORT OF HERBERT BROWNELL,
SPECIAL MASTER**

Dated: September 21, 1968

United States District Court

SOUTHERN DISTRICT OF NEW YORK

61 Civ. 2324

TRANS WORLD AIRLINES, INC.,

Plaintiff,

—against—

**HOWARD R. HUGHES, HUGHES TOOL COMPANY, and
RAYMOND M. HOLLIDAY,**

Defendants.

REPORT OF HERBERT BROWNELL, SPECIAL MASTER

Introduction—Prior History of the Case

This is an action by plaintiff Trans World Airlines ("TWA") against Howard R. Hughes ("Hughes"), Hughes Tool Company ("Toolco"), and Raymond M. Holliday ("Holliday"), an officer of Toolco and a director of TWA at the time of the filing of the complaint. The complaint was filed on June 30, 1961. Service was made on Toolco at that time, but service of process on Holliday was not made until January, 1962. Both Toolco and Holliday appeared and answered the complaint. Hughes was never served, and he has not appeared in the action.

The complaint sets forth three claims. The first claim alleges violations of Sections 1 and 2 of the Sherman Act

and Sections 3 and 7 of the Clayton Act. The second claim, based on certain of the acts alleged in support of the first claim but only those acts committed since December 31, 1960, also alleges violations of Sections 1 and 2 of the Sherman Act and Section 7 (but not Section 3) of the Clayton Act. These two claims allege that TWA is a major U. S. air carrier with both domestic and international routes, that Toolco "was and is engaged . . . since in or about 1939 in the development, manufacture and acquisition of aircraft and related equipment from the manufacturers thereof . . . and in the sale or lease of such aircraft to air carriers", and that Toolco has acquired 78% of the common stock of TWA. The first two claims further allege that through various acts the defendants and Atlas Corporation (named as a co-conspirator but not as a defendant) required TWA to acquire all of its jet aircraft from Toolco and to boycott all other suppliers, provided financing for the acquisition of jet aircraft only on the condition that TWA purchase all its jet aircraft from Toolco, and sold and leased jet aircraft on the condition that the purchaser would not buy or lease from any competitor. The third claim, based on pendent jurisdiction, alleges malicious and wilful interference with the business of TWA through the same acts pleaded in support of the first two claims. The complaint seeks treble damages and also injunctive relief requiring defendants to divest themselves of all stock in TWA and to refrain from acquiring any interest in TWA or seeking to exercise control or domination over TWA. In its answer to the complaint, Toolco asserted various counterclaims against TWA and also against others.

In August 1961, the case was assigned to Judge Charles M. Metzner for all purposes, pursuant to Rule 2 of the

General Rules of the District Court. On February 7, 1962 Judge Metzner appointed J. Lee Rankin as Special Master to supervise the discovery proceedings.

Simultaneously with filing the complaint, TWA moved by order to show cause on June 30, 1961 to take the deposition of Hughes. This motion was denied, however, and Toolco was allowed priority in the taking of depositions. On February 7, 1962, in the same order appointing the Special Master, Judge Metzner established a schedule of depositions, which was subject to change by the Special Master upon application of either party. This schedule called for Toolco to continue with the depositions of some twenty-four witnesses which had then been noticed, with the plaintiff to commence depositions immediately upon completion of Toolco's schedule. The last deposition by Toolco was set for April 19, 1962, and the depositions noticed by TWA were to commence with the deposition of Hughes on April 23, 1962.

This schedule was subsequently amended by the Special Master. The deposition of Hughes was set for September 24, 1962, then adjourned to October 29, 1962, and finally set for February 11, 1963. Although Hughes himself was never served with process as a party, the Special Master ruled that Toolco would be responsible for his appearance at the deposition, and Toolco did not contest this ruling.

On January 10, 1963, Judge Metzner denied an application by Toolco to further postpone the deposition of Hughes, so that Toolco might continue with its own depositions. On January 14, Toolco moved to have the deposition of Hughes taken only on written interrogatories, and in the event that this was denied, further moved to have set down for hearing a motion which it had originally made in August, 1961 to dismiss the complaint. Characterizing

this motion as appearing to be "another attempt to put off the deposition of Hughes", Judge Metzner denied the request to have the deposition taken by interrogatories. As to the second branch of the motion, Judge Metzner observed that the case "is not in a posture for a meaningful disposition of the motions to dismiss the complaint or for summary judgment" and noted the agreement of Toolco on several occasions that such a motion was premature. However, the Court further stated that it "cannot prevent defendant Toolco from pressing these motions at this time" and set the motions down for argument.

After oral argument on February 6, 1963, Judge Metzner denied Toolco's motion from the bench and entered a formal opinion and order the following day. (Reported at 214 F. Supp. 106). In that opinion, Judge Metzner stated that "as to the merits of the motion, there is no doubt that the complaint on its face sets forth a claim against the defendants and is not subject to dismissal under rule 12(b)(6)". Judge Metzner further ruled that the acts of the defendants alleged in the complaint were not exempted from the antitrust laws by virtue of certain orders of the Civil Aeronautics Board, and that the C.A.B. did not have exclusive primary jurisdiction over the subject matter of the complaint.

Almost immediately thereafter, at a pre-trial conference before Judge Metzner on Friday, February 8, 1963, counsel for Toolco announced that Hughes would not appear for the deposition scheduled for the following Monday, February 11. Toolco also declared its unwillingness to produce as previously ordered certain income tax returns, as well as certain other documents for which a claim of attorney-client privilege had been made but rejected by the court. Toolco also filed a written "Notice of Position" dated February 8, which recited in part that:

"Toolco hereby elects, subject only to whatever relief it may hereafter obtain, to rest on the merits of its positions as heretofore taken so that it may avoid the burdens and expenses involved in further pre-trial and trial proceedings prior to the time that an appellate court has had the opportunity to rule upon the decisions and orders heretofore made herein."

Counsel for Toolco elaborated on this position at the pre-trial conference on February 8. Adverting to the earlier ruling of the Special Master that Toolco would be responsible for Hughes' compliance with the deposition subpoena, with the possible sanction of a default if the subpoena were not complied with, counsel stated that "the Tool Company did not seek a review of those rulings of the Special Master by the Court and accepted in effect the responsibility placed on it by that ruling." (Tr. of Feb. 8, p. 9). He also stated Toolco's awareness of the possible consequences of a failure to comply with the discovery procedures:

"I have also had occasion to describe to my client, the Hughes Tool Company, the sanctions available under the Rules by reason of a respectful declination or election to stand on the questions of law which have been decided to date and not to proceed any further with respect to discovery proceedings. I have particularly called to their attention the provisions of 37(d)—Rule 37(d)—of the Federal Rules, with respect to the sanctions which could be applied by the Court on the Tool Company. [Tr. of Feb. 8, p. 9]

.

"The Tool Company does want to rest on the merits of its position, and it does so fully aware of the sanctions which the Court, in its discretion, may impose upon the Tool Company. . . . [Ibid., p. 11]

.

"We are fully aware—my client is fully aware—that by insisting on a right to obtain a review on the legal questions which have been decided to date, and should it develop that they are in error, as indicated by your Honor's decisions and rulings, as a consequence they may be deprived of further defending on the merits, other than on the question of damages." [*Ibid.*, p. 12]

In response to questions from the Court, counsel advised that embraced within the contemplation of the "notice of position" was an advice to the Court that Hughes would not appear for the deposition on February 11, and that plaintiff could take any proceedings it is advised to take by way of sanctions under Rule 37. [Tr. of Feb. 8, p. 20] When counsel for TWA questioned whether Hughes would be bound by the anticipatory default, Toolco further waived the right to any defense against sanctions should Hughes in fact appear for the deposition:

"The Court: * * * Now, Mr. Davis says that as far as the defendant Hughes Tool Company is concerned, they will admit today that Mr. Hughes will not appear on Monday and that as a result you may then take whatever steps you wish to pursuant to Rule 37 [sic].

"I would also like Mr. Davis to state for the record that if by chance Mr. Hughes should appear at the courthouse on Monday, despite what has transpired here this afternoon, that will be no defense to any proceeding taken by T.W.A.

"Mr. Davis: I will so state, your Honor." [Tr. of Feb. 8, pp. 48-49]

Toolco also re-iterated its intention not to produce the documents which it had been ordered to produce, and the Court summarized the state of the proceedings to counsel for the plaintiff and the defendants on the counterclaims as follows:

"The record is now set for you to take whatever action you wish to take on the counterclaims and for Mr. Sonnett to take whatever action he wishes to take on the claims based on the default of Mr. Hughes on Monday.

"Secondly, you have the failure to produce the tax documents, which is an individual and separatr [sic] ground for proceeding; and you have the failure to produce the attorney-client documents, which are a separate and individual ground for proceeding." [Tr. of Feb. 8, pp. 59-60.]

After counsel for Toolco again stipulated as to the binding nature of these acts, the hearing was adjourned.

Thereafter, on February 15, 1963 TWA moved to amend the ad damnum portion of the complaint and formally moved for default judgment pursuant to Rule 37. At the hearing on February 8, counsel for TWA had intimated an intention to increase the amount of damages which TWA was seeking. On May 3, 1963 Judge Metzner granted the motion to amend the complaint and directed that default judgment should be entered for TWA, with a hearing to be held to determine the amount of damages. The question of "the amount of the damages to be paid" was referred to the Special Master previously designated to preside over the discovery proceedings. The counterclaims were also dismissed with prejudice. The opinion is reported at 32 F.R.D. 604. As will appear hereafter, the commencement of the damage hearings was long delayed.

In granting this relief to plaintiff, Judge Metzner reviewed the history of the proceedings to date, and stated:

"It is clear that the deposition of Hughes is essential for the proper presentation of TWA's case. It is also clear that the failure of Hughes to appear on February

11th for his deposition was the result of a clear and studied determination by Toolco after all efforts to postpone the appearance of Hughes had failed. The default was deliberate and willful and justifies the court in entering a default judgment. . . ." 32 F.R.D. at 607.

The order was certified by Judge Metzner for immediate appeal.

On June 2, 1964, the Court of Appeals, Second Circuit, affirmed the propriety of the entry of the default and also the earlier decision of Judge Metzner relating to the Court's jurisdiction. The decision of the Court of Appeals is reported at 332 F. 2d 602. After ruling that the Civil Aeronautics Board did not have primary jurisdiction over the anti-trust activities alleged and that prior orders of the C.A.B. did not immunize the acts alleged in the complaint from the operation of the anti-trust laws, the Court went on to uphold the complaint as stating a cause of action under the anti-trust laws:

"The defendants maintain that in any event the complaint fails to state facts sufficient to establish the jurisdiction of the district court. They claim that the allegations of antitrust violations in the complaint are wholly conclusory and that the specific transactions alleged to have been effected by the defendants do not state a cause of action under the antitrust laws. We do not agree. We cannot say that the specific transactions alleged in TWA's complaint—that Toolco refused to finance aircraft acquisitions by TWA unless TWA agreed to purchase planes from no supplier other than Toolco; that Toolco required TWA generally to boycott all other suppliers of aircraft; that the defendants have attempted through various means to monopolize a substantial segment of interstate and foreign air commerce—are on their face insufficient to

support a claim of antitrust violations, a claim which surely falls within the jurisdiction of the district court. The allegations state the outlines of a tying arrangement, an economic boycott of the defendants' competitors, and an attempt to monopolize commerce, all unlawful under the antitrust statutes. It would be particularly inappropriate to find these allegations insufficient to establish the district court's jurisdiction inasmuch as the defendants denied the plaintiff the right through pre-trial discovery to add more detail and substance to the allegations set forth in the complaint.

.

"We are satisfied that the complaint sufficiently states a cause of action and establishes the district court's jurisdiction." 332 F. 2d at 610-11.

With respect to the dismissal of the counterclaims with prejudice, the Court held that one such counterclaim against additional defendants should have been dismissed for lack of jurisdiction, but otherwise affirmed the dismissal of the counterclaims with prejudice as a consequence of the default. In doing so, the Court affirmed the rulings of the District Court that required production of the tax documents and those documents as to which the claim of attorney-client privilege had been claimed, and affirmed the propriety of granting a judgment by default in view of the non-compliance with these orders and the failure of Hughes to appear as ordered.

"The sanction of judgment by default for failure to comply with discovery orders is the most severe sanction which the court may apply, and its use must be tempered by the careful exercise of judicial discretion to assure that its imposition is merited. However, where one party has acted in willful and deliberate disregard of reasonable and necessary court orders

and the efficient administration of justice, the application of even so stringent a sanction is fully justified and should not be disturbed. [citations omitted]

"Hughes' deposition was absolutely essential to the proper conduct of the litigation. Yet he and Toolco seized upon every opportunity to forestall this event. To this end they demanded the production of a multitude of documents by TWA and the additional defendants and secured successive adjournments of the deposition. Indeed, Hughes and Toolco seemed to look upon the entire discovery proceedings as some sort of a game, rather than as a means of securing the just and expeditious settlement of the important matters in dispute. It was only at the very eve of the Hughes deposition—after the other litigants had been put to much delay and expense—that the defendants made a 'business decision' to terminate discovery.

"Hughes' conduct is particularly intolerable in a large and complex litigation such as this one. The protracted antitrust suit taxes the energies and resourcefulness of each party to the litigation; and it consumes much time of the court and the special masters it appoints. Tactics such as Hughes' serve only to frustrate the implementation of the discovery machinery devised by the federal judiciary to expedite the handling of such complex litigation. See Handbook of Recommended Procedure for the Trial of Protracted Cases, Report of the Judicial Conference Study Group on Procedure in Protracted Litigation, 25 F.R.D. 351 et seq. (1960).

"In the light of all these circumstances, the district court was not obliged to employ sanctions less severe than the dismissal of the counterclaims with prejudice. Whatever lesser sanctions might have sufficed with regard to the documents withheld by the defendants, it seems to us that a dismissal of the counterclaims was appropriate, in view of Hughes' intransigence after intensive and expensive discovery proceedings already protracted for more than one year." 332 F. 2d at 614-15.

The Supreme Court granted certiorari as to the decision of the Court of Appeals, but the writ of certiorari was subsequently dismissed as improvidently granted. 380 U. S. 248-9 (March 8, 1965).

On May 10, 1965, TWA moved before J. Lee Rankin, the Special Master, for an order adopting certain interim findings of fact, based on the allegations of the complaint. The interim findings were sought by TWA "as a basis for the submission of its further evidence as to the amount of its damages." On July 30, the Special Master entered an order which outlined the effect of the default and which tentatively adopted some of the proposed interim findings while tentatively refusing to adopt others.

The failure of the Special Master to adopt the omitted findings was appealed by TWA to the district court. On November 16, 1965, Judge Metzner entered an opinion and order which did not deal with specific findings but which further stated the law pertaining to the effect of the default and returned the matter to the Special Master. 38 F.R.D. 499 (1965). These two decisions by the Special Master and Judge Metzner, as well as a subsequent decision by Judge Metzner noted below, are described more fully elsewhere in this opinion.

Shortly thereafter, Toolco moved before Judge Metzner for an order calling on TWA to set forth the facts which would preclude a finding that Toolco had never been engaged in the manufacture or supply of aircraft in competition with any other manufacturer or supplier. This motion was denied by Judge Metzner on January 4, 1966.

J. Lee Rankin, who had been appointed Special Master to determine the amount of damages, resigned this position upon being appointed Corporation Counsel of the City of

New York. The undersigned was appointed as Special Master under the same terms as the original reference.

On May 2, 1966, the hearing on damages formally commenced with the submission of the plaintiff's direct testimony on damages in written narrative form. Defendants' direct testimony was also thereafter submitted in written narrative form. All witnesses were subjected to thorough cross-examination, which (together with the oral testimony of one rebuttal witness for plaintiff) covers nearly 11,000 pages. More than 800 exhibits were also introduced by both parties. The hearings closed on April 9, 1968, and printed briefs have been submitted by both parties.

Effect of the Default

The first question which must be considered is the effect of the default on plaintiff's case and the extent of the burden which plaintiff must still meet in order to justify recovery. Despite prior rulings in the case, this has been the subject of continuing disagreement between the parties in the damage hearings.

Prior to the commencement of the hearings on damages, plaintiff moved before Special Master Rankin, as noted above, for certain findings of fact based on the allegations of the complaint, which were requested on an interim basis as a foundation for the submission of its evidence on damages. Plaintiff took the position that the default justified the entry of such findings without further offer of proof by plaintiff. After full written and oral argument, Special Master Rankin entered on July 30, 1965 an opinion and order which discussed in detail the effect of the default and which adopted certain of the proposed findings on an interim basis. However, Special Master Rankin declined,

also on an interim basis, to adopt the balance of the proposed findings. A full statement of his opinion is required to properly evaluate the positions of the parties in the damage hearings. The Special Master described the effect of the default as follows:

"The default having been entered for the reasons indicated above, the question remains as to its effect. The default is an admission implied by law as a result of the default, which thereupon dispenses with any proof of the facts alleged in the complaint, except as to unliquidated damages. The default not only has the legal effect of an admission of the allegations, but precludes any showing of defensive matters in regard thereto except as to damages. When the damages are not liquidated, there is no admission as to the damages by reason of the default, and proof thereof is required. (See 3 Freeman, Law of Judgments, Secs. 1281-1282, pp. 2662-2664 (Tuttle's Ed. 1925)).

.

"All parties agree that *Thomson v. Wooster*, 114 U. S. 104 (1885) is the leading case by the Supreme Court of the United States on the effect of a default. It is recognized in that decision that upon the entry of a decree *pro confesso* all matters alleged with sufficient certainty are admitted. However, it is as to those matters not adequately alleged with regard to certainty, or subjects which from their nature and the course of the court proceedings require an examination of details imposing an obligation on the complainant to furnish proof, that differences arise.

.

"While conclusions of law are for the court in the determination of any judgment to be awarded and it thus decides whether the damages proved did in fact flow from the violations of law alleged, the defendants after their default no longer have the right to contest

whether the asserted violations did in fact occur. They are limited to pointing out such information or evidence as may be in the record where the court should take judicial notice of records or facts which show that the allegations could not be true.

"When the plaintiff has pleaded a 'statement of claim' showing that he is entitled to relief (F.R.C. P. Rule VIII (a)), he may yet be unable to prove the case alleged. But that is not a problem in a default where the allegations are, in legal effect, admitted. Defaulting defendants are allowed to raise questions as to allegations contrary to judicially known facts because when a pleader states matter as facts which is not out of harmony with that which the court judicially knows, such averments in the pleading are disregarded. *Greeson v. Imperial Irrigation District*, 59 F. 2d 529 (9th Cir. 1932); *Interstate Natural Gas Company v. Southern California Gas Company*, 209 F. 2d 380 (9th Cir. 1953). See also *In Re: Woodmar Realty Company*, 294 F. 2d 785 (7th Cir. 1961); *Cert. Denied*, 369 U. S. 803 (1962) and *Glen Coal Company v. Dickenson Fuel Company*, 72 F. 2d 885 (4th Cir. 1934).

* * * * *

"Thus, at this stage of the case, the court is obligated to arrive at a judgment and that judgment must be just. Therefore, whenever a court would take judicial notice of the proceedings of public bodies such as the Civil Aeronautics Board or other Federal commissions or the files of the court or any similar matters and such records and information would satisfy the court that any allegation of the complaint or any part of an allegation could not be true, the court is not required by reason of the default to accept such allegation, or such part of it.

"The effect of information appearing in the record up to this date, or as hereafter developed, bearing upon the truth of the allegations of the complaint, is somewhat different. Where such evidence clearly shows

that the allegation or part of an allegation could not possibly be true, the court will not stultify itself by accepting such allegation or part of it in the face of such evidence. Where, however, the evidence merely may tend to show that the allegation may not be maintained and the defendants by reason of the nature of their default have materially interfered with the plaintiff's ability to produce evidence which might support the allegation or disprove such record evidence, the court is not required to reject the allegations. Such a result would reward the defendants for their interference with the processes of the court.

"For the reasons indicated the defendants, at this point, do not have the right to produce evidence to try to establish in any manner that the allegations of the complaint other than as to damages cannot be maintained. That opportunity was given up by their decision to default. The rights of plaintiff resulting from the default should not be taken away by any refinements and legalistic reasoning of any considerations that do not reach to the level of necessary and proper requirements for a fair and just hearing on the question of damages.

"On the other hand, it should not be forgotten that the court in entering a judgment of default is performing 'a judicial act'. *Pope v. United States*, 323 U. S. 1. Furthermore, Rule 55(b)(2), under which the court directed that this hearing be held recognizes that such is the nature of the responsibility, at this point in the default proceeding, by stating:

'If, in order to enable the court to enter judgment or to carry it into effect, it is necessary to take an account or to determine the amount of damages or to establish the truth of any averment by evidence or to make an investigation of any other matter, the court may conduct such hearings or order such references as to it seems necessary and proper . . .'

"It is within the framework described that the Special Master must proceed. Recognizing that it is his duty on behalf of the court to be satisfied of the liability of the defendants, as well as of the proof, according to law, of the amount of damages claimed, he must also be satisfied by a preponderance of the evidence that any damages were proximately caused by the violations of law alleged in the complaint. Therefore, in the belief that the damage portion of the trial will be advanced by his doing so, the Special Master has sustained a considerable portion of the plaintiff's motion and has adopted certain findings requested, but only on an interim basis, for the purposes of the hearings on damages. He is reserving the right, however, before such hearings are closed to modify any or all of said interim findings if he finds it desirable or necessary in order that justice may be promoted in this case. The Special Master has also declined to adopt certain interim findings proposed in the motion. The findings adopted are set forth in Exhibit AA attached to this opinion and order and made a part hereof as fully as if set out herein. [Exhibit AA is not reproduced herein.]

"The failure to adopt, at this time, any proposed finding is not a determination by the Special Master that such finding is false, or disproved, or that it will not be fully established by the close of the hearings on damages. Such proposed findings have not been adopted at this time because in each instance they appear directly or indirectly to have a bearing upon the question of damages, and may be affected either partially or wholly by the evidence which is adduced in proof of damages herein.

"The failure to now adopt such proposed interim findings, is not to be construed as placing such findings at issue, except to the limited extent that there is any information of which a court would take judicial notice, or there is evidence in the record which would prove such findings to be false or there may be evidence prop-

erly adduced as a part of these hearings on damages which would establish such findings to be false and is brought to the attention of the Special Master before the hearings close. The defendants are not allowed by the present refusal to adopt such tendered findings to contest them on the merits as they could do if there had been no default."

On appeal by plaintiff to Judge Metzner from portions of the Special Master's opinion and order, the legal effects of the default were again thoroughly briefed and argued orally. On November 16, 1965, Judge Metzner entered an opinion and order disposing of the appeal (reported at 38 F.R.D. 499). This opinion and order made no reference to any specific proposed findings which the Special Master had agreed or declined to adopt. It did, however, summarize generally the legal effect of the default, clarified a seeming ambiguity in the opinion of the Special Master relating to liability and proximate cause, and returned the case to the Special Master for proceedings in accordance with the Court's opinion. That opinion is, of course, controlling here.

Pointing out that the reference to the Special Master was made "to determine the amount of damages", Judge Metzner described the effect of the default as follows:

"Liability is not an issue for the Special Master except in a very limited sense. The sufficiency of the complaint has already been established by the denial of defendant's motion to dismiss. 214 F. Supp. 106 (S. D. N. Y. 1963), *aff'd*, 332 F. 2d 602 (2d Cir. 1964), *writ of cert. dismissed*, 380 U. S. 248, 85 S. Ct. 934, 13 L. Ed. 2d 817 (1965). By virtue of the default the defendant has admitted the truth of the well-pleaded allegations of the complaint. *Thomson v. Wooster*, 114 U. S. 104, 5 S. Ct. 788, 29 L. Ed. 105 (1885).

"Allegations are not well pleaded if they are shown to be indefinite or erroneous by other statements in

the complaint (*Thomson v. Wooster, supra*); or where they are contrary to facts of which the court will take judicial notice (*Glenn Coal Co. v. Dickinson Fuel Co.*, 72 F. 2d 885, 889 (4th Cir. 1934)); or where they are not susceptible of proof by legitimate evidence (*Cohen v. United States*, 129 F. 2d 733 (8th Cir. 1942); *Greeson v. Imperial Irr. Dist.*, 59 F. 2d 529 (9th Cir. 1932)); or where they are contrary to uncontroverted material in the file of the case (*Interstate Nat. Gas Co. v. Southern Calif. Gas Co.*, 209 F. 2d 380, 384 (9th Cir. 1953); *In re Woodmar Realty Co.*, 294 F. 2d 785 (7th Cir. 1961), *cert. denied*, 369 U. S. 803, 82 S. Ct. 643, 72 L. Ed. 550 (1962)). However, it may be shown by plaintiff, in the context of this case, that some matters of which the court may take judicial notice should not be so noticed. See McCormick, Evidence § 330 (1954). Where file material is involved, if the plaintiff did not have full opportunity to meet or controvert such material, then it should not be used to nullify the allegation. If evidence merely tends to show that an allegation is not true, the allegation must be taken as true in this default. Finally, the plaintiff is entitled to the benefit of all reasonable inferences from the evidence tendered."

Judge Metzner's opinion makes clear that the failure of the Special Master to adopt certain of the findings did not constitute a determination that the allegations on which they are based are not well-pleaded:

"The Special Master stated that the failure to adopt any proposed finding is not a determination that such finding

'is false, or disproved, or that it will not be fully established by the close of the hearings on damages.'

Such proposed findings are not at issue except to the limited extent noted above. The Special Master specifically stated that

'the defendants are not allowed by the present refusal to adopt such tendered findings to contest them on the merits as they could do if there had been no default.' "

It is thus clear from the Court's opinion that even those findings not adopted by the Special Master are admitted by the default except to the extent that they can be disproved within the framework of the well-pleaded allegations rule as set forth by the Court. Furthermore, the Court's opinion also establishes that the allegations are presumed to be well-pleaded, and that the burden is on the defendants to show that they are not:

"Attempts by defendant to escape the effects of its default should be strictly circumscribed. It should not be afforded an opportunity to litigate what has already been deemed admitted in law. In the absence of an exceedingly strong showing that an allegation is untrue under the rules set forth above, the allegation stands as admitted."

A subsequent opinion and order by Judge Metzner on January 4, 1966 also shows that the defendants carry the burden of disproving each allegation of the complaint, despite the Special Master's failure tentatively to adopt a finding based on a particular allegation.

One of the findings which the plaintiff had requested but which the Special Master failed to make at that point in the proceedings was to the effect that Toolco was engaged in the development and manufacture of aircraft, as alleged in the complaint. The Special Master did adopt a portion of the same finding which stated that Toolco was engaged in the acquisition of aircraft from manufacturers in various states and in the sale and lease of such aircraft in interstate commerce, but failed to adopt a further position to

the effect that such sales and leases were "to air carriers in various other states". The defendants, as above mentioned, moved before Judge Metzner in December, 1965 for an order requiring TWA to set forth the facts on which TWA would rely in order to preclude the entry of a finding of fact as follows:

"The facts before this Court establish that at no time during the period covered by the complaint herein were the defendants, or any of them, engaged in the manufacture or supply of commercial transport aircraft in competition with any manufacturer or supplier of such aircraft."

Despite the failure of the Special Master to adopt the findings noted above, Judge Metzner ruled that the burden with respect to these facts still rested on the defendants rather than the plaintiff, and denied the motion:

"It asks that plaintiff come forward to negative a fact which defendant asserts as true. The shoe is on the other foot."

Finally, it may be noted that there is no procedural requirement for making such interim findings before taking evidence in the hearing on damages, and the Special Master's disposition of the request for findings appears to have been simply an exercise of the Master's power to regulate the proceedings before him, which is generally subject to review only for abuse of discretion. See 5 Moore's Federal Practice, ¶ 53.06. In fact, during oral argument before Judge Metzner on the motion to review the Special Master's failure to adopt certain of the proposed findings, both counsel for Toolco and the Court treated the Special Master's order as an exercise of discretion in the conduct of the proceedings. Counsel for Toolco asserted that the Mas-

ter could have denied all of the proposed findings without committing reversible error, and the Court agreed, stating that the Master "wanted to lay down some ground rules which could perhaps shorten the hearing." (Tr. of Sept. 28, 1965, pp. 15-16)

It is, therefore, clear that the burden of disproving *all* the allegations of the complaint still rests on the defendants, and the failure of the Special Master to adopt certain findings of fact has not created in the plaintiff a burden of proving those facts. Although the defendants have asserted that the findings which were not adopted represent "gaps" in plaintiff's case which plaintiff is required to fill in through proof, this contention cannot be and is not sustained.

The burden assumed by a defaulting party is a heavy one. Its weight is illustrated by *Thomson v. Wooster*, 114 U. S. 104 (1885), which was cited by Judge Metzner, and by other early Supreme Court decisions. In *Thomson*, the plaintiff sued for infringement of a re-issued patent on a folding guide for sewing machines. The original patent was dated October 5, 1858, had been extended for seven years in 1872, and had been re-issued in December 1872. The complaint alleged that numerous suits had been brought and sustained against other infringers, and sought an accounting of profits and damages. The defendants appeared but failed to file an answer to the complaint, and a decree *pro confesso* was entered. The case was referred to a master to determine the profits and damages. After an award by the master, the defendants appealed, asserting among other arguments that the re-issued patent was invalid because it was for an invention other than the one covered by the original patent, and also because an excessive amount of time elapsed between the original issue

and the re-issue, and as a further reason because the complaint alleged that successful suits had been brought on the original patent, whereas invalidity or inoperativeness were conditions precedent of a re-issue. These arguments were rejected by the Supreme Court.

"A confession of facts properly pleaded dispenses with proof of those facts, and is as effective for the purposes of the suit as if the facts were proved; and a decree *pro confesso* regards the statements of the bill as confessed.

.

"... it seems clear that the defendants, after the entry of the decree *pro confesso*, and whilst it stood unrevoked, were absolutely barred and precluded from alleging anything in derogation of, or in opposition to, the said decree. . . . The attempt, on the hearing before the master, to show that the reissued patent was for a different invention from that described in the original patent, or to show that there was such unreasonable delay in applying for it as to render it void under the recent decisions of this court, was entirely inadmissible because repugnant to the decree. The defendants could not be allowed to question the validity of the patent which the decree had declared valid. The fact that the reissue was applied for and granted fourteen years after the date of the original patent would, undoubtedly, had the cause been defended and the validity of the reissued patent been controverted, been strongly presumptive of unreasonable delay; but it might possibly have been explained, and the court could not say as a matter of law, and certainly, under the decree of the court, the master could not say, that it was insusceptible of explanation. And on this appeal it is surely irregular to question the allegations of the bill. If anything appears in those allegations themselves going to show that the decree was erroneous, of course it is assignable for error; but any attempt

to introduce facts not embraced in those allegations, for the purpose of countervailing the decree, is manifestly improper. The introduction of the original patent, pending the appeal, was clearly irregular." (114 U. S. at 110 and 114)

The Supreme Court then noted the argument of defendants that as a matter of law the re-issued patent must be void, since (quoting the defendants' assignment of errors),

"... the bill avers that during the fourteen years of the original term of patent the validity of said letters patent was established in numerous suits in the Circuit Courts of the United States, and that all persons sued took licenses and paid therefor, as well as many others not sued, thereby averring, in substance, that the original letters patent were *valid* and *operative*:

"Wherefore, appellants ask this court to hold that the original letters patent having been *valid* and *operative*, as averred by complainant, for over fourteen years, no reissue thereafter could be legally obtained, because *invalidity* or *inoperativeness* are conditions precedent to the grant of a reissue.'

"The answer to this assignment is obvious. The suits brought on the original patent may have been for infringements committed against particular parts of the invention, or modes of using it and putting it into operation, as to which the specification was clear, full and sufficient; whilst, at the same time, there may have been certain other parts of the invention, or modes of using it and putting it into operation, as to which the specification was defective or insufficient, and which were not noticed until the application for reissue was made; or, in the original patent the patentee may have claimed as his own invention more than he had a right to claim as new—a mistake which might be corrected at any time. At all events, the court cannot

say, as mere matter of law, that this might not have been the case." (114 U. S. at 115)

The Supreme Court's disposition in *Thomson* of the defendants' attacks on the validity of the allegations in the plaintiff's bill shows the exceedingly heavy burden assumed by a defaulting party who attempts to disprove the allegations of the complaint. Even when relying on matters appearing of record, the defendant must show that such matters conclusively, and beyond all doubt, prove that the allegations could not be true.

Another case illustrating this heavy burden is *Harshman v. Knox County*, 122 U. S. 306 (1887). Plaintiff had sued the county on certain bonds which the county had issued, and when the county defaulted, obtained a judgment of \$77,374.46. He then brought a proceeding by mandamus against the Justices of the county court to compel them to levy a tax sufficient to pay the judgment. The county defended on the ground that the bonds were issued pursuant to a special statute (incorporating a railroad) which authorized a certain rate of tax to support the bonds, that the county had levied such tax and still had insufficient money to pay, and that there was no authority to levy additional taxes. Although the bonds, which were attached to the original complaint, recited that they were issued pursuant to that special statute, the plaintiff in his complaint alleged that the bonds were issued pursuant to a different and more general statute which granted unlimited taxing power. As recited in the Supreme Court's opinion,

"... the contention of the respondents in the Circuit Court was, that they were entitled to show by the recitals in the bonds themselves, in contradiction to those contained in the judgment founded upon them,

that they were in fact issued under the charter of the corporation, and not under the general law. On this point, the judgment of the Circuit Court was in their favor, denying to the relator the peremptory writ of mandamus, and this decision is now alleged as error, for which the judgment should be reversed." (122 U. S. at 316)

Noting that the question was whether the county was estopped to deny that the bonds were issued under the general statute, the Supreme Court opinion stated:

"The averment to that effect in the petition in the action, if material and traversable, was confessed by the default. * * * The averment as to the character of the bonds, and the grounds and authority upon which they were founded, so as to constitute them legal obligations of the county of Knox, contained in the petition, was clearly material to the plaintiff's cause of action. If the defendant had denied it by a proper pleading, the fact would have been put in issue, and the plaintiff would have been bound to prove it. * * * In the absence of a denial, the fact as stated in the petition of the plaintiff is confessed by the default, and stands as an admission on the record, of its truth by the defendant." (122 U. S. at 316-317)

The judgment of the Circuit Court was reversed, with directions to award a peremptory mandamus.

Proof of Basic Anti-Trust Allegations

Against the background of decisions such as these, and having established that defendants bear the burden of disproving the allegations in the complaint, regardless of the Special Master's interim findings, it must now be determined whether any of the allegations have been shown

to be disproved within the narrow confines of the "well-pleaded allegations" rule. The chief allegation which defendants claim to be disproved is the allegation that Toolco was engaged in the development and manufacture of aircraft and the supply of aircraft to air carriers. The defendants claim that this allegation is disproved by various C.A.B. opinions, orders and records which are said to be appropriate for judicial notice, and by certain exhibits introduced during the hearings on damages as well as by the testimony of certain of plaintiff's witnesses during the hearings.

The question of judicial notice is an important one, for it underlies a major portion of Toolco's defense on liability. However, Toolco's reliance upon judicial notice of official documents and records is misplaced. Although judicial notice may indeed be taken of official reports such as reports of administrative agencies, the notice extends only to the existence of the report and its contents, and not to the accuracy of facts recited in the report. For example, in *Stasiukevich v. Nicolls*, 168 F. 2d 474, 479 (1st Cir. 1948), Judge Magruder denied judicial notice as to facts recited in an official Congressional committee report:

"The official report of a legislative or congressional committee is admissible in evidence in a judicial proceeding, as an exception to the hearsay rule, where the report, within the scope of the subject matter delegated to the committee for investigation, contains findings of fact on a matter which is at issue in the judicial proceeding. See Wigmore on Evidence, §§ 1662, 1670. Indeed, the court could properly take judicial notice of the report, without its formal introduction into evidence. But though the court may receive the report in evidence, or may take judicial notice of its existence and contents, this does not mean that the court must

accept the findings in the report as indisputable truth; the findings are merely evidence of the facts asserted. See *United [sic] States v. Aluminum Co. of America*, 2 Cir., 1945, 148 F. 2d 416, 445, 446; Morgan, *The Law of Evidence*, 1941-1945, 59 Harv. L. Rev. 481, 485-86 (1946)."

McCormick on Evidence, §328 at p. 704, also notes that while courts will take judicial notice of official documents, this merely "dispenses with formal authenticating proof of the genuineness of the documents" and "does not mean that if the document is a statement of facts, such facts are themselves judicially noticed."

No authority has been cited to support taking judicial notice of facts merely because they are contained in the findings of an administrative agency, and indeed, such treatment would accord the findings of an administrative agency greater weight than is accorded the findings of a court of law. Determinations of fact by a court of law may be used in a separate proceeding only within the narrow confines of the doctrines of *res judicata* and collateral estoppel, and are not binding on other parties. A Court's reliance on findings of fact in another case may constitute reversible error. Cf. *Radovich v. Cunard*, 364 F. 2d 149 (2nd Cir. 1966). If judicial notice cannot be taken of facts contained in findings of a court of law, it would seem that *a fortiori* judicial notice may not be taken of facts simply because they are contained in findings of an administrative agency. Such findings may be of some probative value under the authorities cited above, and in the absence of a default the C.A.B. materials might be quite persuasive. However, they do not permit judicial notice to be taken of the assertion that Toolco was never a manufacturer or supplier of aircraft.

The existence and contents of an administrative order or a document filed with an administrative agency may under certain circumstances be of relevance to a judicial proceeding apart from the facts recited therein. This is true, for example, with regard to the question of whether an administrative agency has primary jurisdiction over the subject matter being litigated. *Interstate Nat. Gas. Co. v. Southern Calif. Gas. Co.*, 209 F. 2d 380 (9th Cir. 1953). However, the relevance of C.A.B. orders and filings to primary jurisdiction in this case has already been considered and disposed of by Judge Metzner and by the Court of Appeals.

Even if judicial notice were taken of the fact that no U. S. air carrier ever purchased a commercial transport aircraft manufactured by Toolco, this would not of itself be sufficient to disprove the allegation that Toolco was "engaged in" the development and manufacture of aircraft. In addition to the general allegation of "engaging" in paragraph 3 of the complaint, there is also an allegation that "defendants and General Dynamics Corporation (hereinafter called 'Convair') entered into an arrangement for the joint development of a jet-powered aircraft to be manufactured by Convair and to be supplied by the defendants to air carriers, including TWA" (Paragraph 14) as well as an allegation that "the defendants also entered into a plan under which Toolco would itself commence the manufacture of a jet-powered aircraft" with the intent that "Toolco would furnish this aircraft . . . both to TWA and to other air carriers." (Paragraph 15). While these efforts were eventually abandoned, they would appear to constitute "engaging in" the development and manufacture of aircraft. Also, they occurred at the period of time when TWA alleges that it should have been arranging for purchases from

other suppliers such as Boeing Aircraft Corporation (Boeing). Furthermore, there is evidence which would suggest that the development and manufacture of the Convair 880 aircraft, which did in fact take place, had elements of a joint venture between Toolco and Convair, with Toolco to benefit financially from the sale of such aircraft over and above the initial order for 40 placed by Toolco and Delta Airlines Inc. (Delta). There is also evidence that Hughes took steps to find buyers, including Delta, for the Convair 880. Defendants do not seriously contest these facts, and in many cases admit them. In view of the specific allegations of paragraphs 14 and 15 of the complaint, which are admitted by the default and which have not been disproved by the defendants under the "well-pleaded" rule, and in view of the additional evidence suggesting what might have been shown to be a joint venture between Convair and Toolco, it is not possible to find that the allegation of "engaging in" the development and manufacture of aircraft could not be true. The testimony of Robert W. Rummel cited at p. 55 of defendants' brief likewise does not show that the allegation could not be true, but at best tends to show that it may not be true. This is not a sufficient showing under the rules laid down in Judge Metzger's opinion:

"If evidence merely tends to show that an allegation is not true, the allegation must be taken as true in this default."

The same holds true with respect to the allegations of the complaint that Toolco was a supplier of aircraft purchased from other manufacturers. The general allegation that Toolco was engaged in the supply of such aircraft to airlines (Paragraph 3) is supplemented by allegations

that Toolco purchased aircraft from Boeing and Convair (Paragraph 17), that defendants caused six of the Boeing aircraft to be "diverted" to the principal transatlantic competitor of TWA (Paragraph 18), that defendants caused six of the Convair 880 aircraft to be leased to Northeast Airlines Inc. (Northeast), of which three had previously been assigned to TWA (Paragraph 22), and that Toolco also agreed to purchase Convair 990 aircraft from Convair and sought to have TWA purchase these aircraft from Toolco, rather than purchasing additional aircraft from Boeing as TWA proposed to do (Paragraphs 37 and 38). There was also evidence that Toolco purchased a large supply of jet engines from Pratt & Whitney Aircraft Corporation, which it subsequently sold at a profit.

Toolco does not deny that it purchased aircraft, or that it sold aircraft to TWA. In fact, it asserts that all of the aircraft which it purchased were purchased for TWA and as a convenience to TWA, and that TWA would have been unable to purchase such aircraft itself because of financial considerations. It does not deny that six Boeing aircraft purchased by Toolco from Boeing were assigned to Pan American Airways Inc. (Pan Am), or that six of the thirty Convair 880 aircraft originally purchased by Toolco from Convair were leased by Convair to Northeast, but it does contend that these were merely the disposition of aircraft which had been determined to be excess to TWA's needs by TWA's own management. Furthermore, it contends that since all aircraft sold by Toolco were manufactured by Boeing or Convair, there can be no question of restraining competition by Boeing or Convair, while Douglas Aircraft Corporation (Douglas), the third major manufacturer, was not in the running for TWA's orders in any case.

Here again, it is difficult to say how the issues would have been resolved had this case gone to trial. However,

in the context of the default, it cannot be said that defendants have met the difficult burden of showing that the supplier allegations are not well-pleaded. While a prospective purchaser could purchase Boeing or Convair jets from Boeing or Convair rather than Toolco, the element of delivery time was a factor which might cause such a purchaser to turn to Toolco rather than to the manufacturer directly. Jet aircraft, being an enormously expensive commodity, are not manufactured and sold from open stock. A purchaser from a manufacturer at a particular point in time would be offered certain dates for future delivery, depending on the manufacturer's backlog and production facilities at the time of order. On the other hand, Toolco might be able to offer the assignment of aircraft which had been ordered previously and which were scheduled for delivery at dates earlier than those which the manufacturer could offer. To the extent that only one manufacturer is involved, then it is true that the total number of aircraft sold by that manufacturer remains the same. However, it cannot be said as a matter of law that Toolco's ability to offer certain delivery dates to Pan American for Boeing aircraft might not have influenced Pan American to forego purchasing from Douglas, or that Northeast might not have purchased or leased from some manufacturer other than Convair if the Toolco 880's had not been available. Furthermore, price increases over a period of time by a manufacturer might mean that the manufacturer's price at the time of negotiation with a new customer was higher than that paid by Toolco. In fact, this appears to have been the case with the Pratt & Whitney engines. The fact that Toolco in this litigation refused to make available certain documents and information which might have had bearing on its sales of aircraft and engines and the

profits or tax savings which it may have derived therefrom, makes it particularly difficult to sustain Toolco's contention that it purchased only for the benefit of TWA. There is, moreover, an allegation in the complaint that "Despite repeated requests by TWA, Toolco refused throughout the period 1956 to 1960 to assign to TWA the rights to acquire" the jets which Toolco had ordered from Convair and Boeing (Paragraph 18). This allegation has not been disproved under the "well-pleaded allegations" rule and therefore stands as admitted. It tends to rebut the argument that the aircraft were ordered solely for TWA.

Much of defendants' argument that Toolco was not a supplier of aircraft centers around evidence that Hughes and Toolco were acting in an effort to secure "the newest and finest equipment" for TWA. (Defendants' brief, p. 74, and generally pp. 73-94). However, the fact that Hughes and Toolco were interested in securing good aircraft for TWA is not inconsistent with an intention to act as a supplier of aircraft to TWA and to other airlines as well. Nor is the fact that aircraft were ordered to TWA specifications of itself conclusive that such aircraft were intended solely for TWA, since certain of these aircraft were in fact sold or leased to other airlines, namely Pan American and Northeast. Furthermore, there is evidence that Toolco ordered Convair 990 aircraft which were to be built to the specifications of American Airlines.

Although there is evidence to suggest that Toolco may have been purchasing solely for TWA, this does not constitute a sufficient showing on the part of defendants. Furthermore, the intention of Toolco in ordering the aircraft is a subject which undoubtedly would have been developed more fully had the deposition of Hughes been taken. The default foreclosed fuller examination of this question.

Under all of the circumstances, it cannot be said that defendants have disproved the "supplier" allegations within the limits of the "well-pleaded allegations" rule.

In short, the evidence relied on by Toolco merely tends to support its position and does not conclusively establish that the allegations could not be true. Moreover, in addition to the allegations of the complaint cited above, it is also alleged that Hughes was the sole stockholder of Toolco and controlled its activities (paragraph 4) and that Toolco in turn had acquired more than 78% of TWA's common stock (paragraph 11), which is far more than a controlling interest. Judge Metzner in his opinion of May 3, 1963 stated that:

"It is clear that during all of the times covered by the complaint the management of TWA was controlled by Hughes personally." 32 F.R.D. at 606

Therefore, even a conclusive showing that the six Boeing jets and ten Convair jets were declared excess to TWA's needs with concurrence of the Hughes-dominated TWA management would not necessarily establish as a matter of law that Toolco had no responsibility for the decision to cut back, which Toolco asserts was the sole reason for the sale of aircraft to carriers other than TWA.

One other allegation in the complaint which may require special comment is the allegation that Atlas, though not named as a defendant, was a co-conspirator with defendants in seeking to restrain competition. Since Atlas was not named as a defendant, it has not been represented by counsel at any stage of this case. Furthermore, the occurrence of the default has precluded any examination of whether there is any evidence to support the charge of conspiracy.

The law of the default appears to require that Atlas be deemed to have conspired with Toolco for purposes of this litigation. The complaint alleges generally that Atlas, together with the defendants, engaged in a conspiracy and attempt to restrain trade in violation of various provisions of the antitrust laws (paragraph 9), that the acts of Atlas were done in furtherance of the offenses charged and with anti-competitive intent, for the profit of Atlas (paragraph 10), and that more specifically, Atlas joined with Toolco in attempting to force upon TWA a merger with Northeast, which would have enlarged the defendants' captive market for aircraft and would have furthered the anti-competitive scheme (paragraphs 21 and 47). Since the allegations of conspiracy have not been disproved within the limits of Judge Metzner's order, they must be taken as admitted as far as the defendants in this case are concerned. The fact that Atlas was not named as a defendant does not prevent a charge that Toolco conspired with Atlas. *U. S. v. Griffith*, 334 U. S. 100, 103 (1948). However, the "fact" of the conspiracy is taken to be true only for purposes of this litigation and between the parties to this litigation. There is no intent to bind Atlas or to suggest what outcome would have resulted as to it had the allegations of the complaint been litigated.

Proximate Cause

Apart from the "well-pleaded allegations" rule, however, the defendants argue that under the opinion of Special Master Rankin, proximate cause is not admitted for any purpose by the default. They assert that plaintiff has the burden of proving that any injuries which it suffered were proximately caused by antitrust violations of the defen-

dants. Although admitting that the default may have established the existence of antitrust violations for purposes of this proceeding, they assert that the default did not relieve the plaintiff of establishing this causal connection by means of proof submitted in the hearing on damages. In support of this position, they point to the statement in the Special Master's opinion that he "must also be satisfied by a preponderance of the evidence that any damages were proximately caused by the violations of law alleged in the complaint", a requirement flowing from the Special Master's duty "on behalf of the court to be satisfied of the liability of the defendants, as well as the proof, according to law, of the amount of damages claimed"

However, defendants' position cannot be sustained. Judge Metzner in his opinion noted that the Special Master's mention of a duty "to be satisfied of the liability of the defendants" might appear to be inconsistent with an earlier statement by the Special Master that "the defendants, at this point, do not have the right to produce evidence to try to establish in any manner that the allegations of the complaint other than as to damages cannot be maintained." Referring to this as an "ambiguity . . . which may need clarification", Judge Metzner stated that the conflict in approach was only an apparent one in light of the Special Master's entire opinion, that the matter was referred to the Special Master to "determine the amount of damages", and that "[l]iability is not an issue for the Special Master except in a very limited sense." The sufficiency of the complaint had already been upheld, and the default admitted all well-pleaded allegations of the complaint. Therefore, liability was an issue only to the extent that the defendants could show, within the rules laid out in Judge Metzner's opinion, that particular allegations in the

complaint were not well-pleaded. Thus under Judge Metzner's opinion (which is binding here), the reference to proximate cause in the Special Master's opinion is interpreted to mean that the plaintiff (as is customary) has the burden of establishing proximate cause, but that this burden is satisfied as to liability if proximate cause is adequately alleged in the complaint, unless the defendants are able to show that such allegations are not well-pleaded. It does not mean that the plaintiff must always prove proximate cause with evidence, regardless of a default.

This conclusion is fortified by the few authorities which bear upon the subject. In the recent case of *Jones v. Uris Sales Corp.*, 63 Civ. 2018 (S. D. N. Y. June 27, 1966), *affirmed* 373 F. 2d 644 on the basis of the District Court's opinion on this issue, Judge MacMahon rejected a similar argument by a defaulting defendant that the plaintiff had the burden of proving proximate cause in a hearing before a special master on the question of damages:

"Defendants' second contention, that even if the allegations are 'distinct and positive,' plaintiff must still prove 'a causal relationship between the allegation deemed admitted and the damage resulting therefrom,' is an obvious attempt to cripple the rule of *Thomson v. Wooster* by qualifying it. Defendants have cited no authority in support of their contention, and we seriously doubt that any exists. In any event, the causal relationship is stated distinctly in the complaint...."

The implication of Rule 55, Federal Rules of Civil Procedure, also suggests that proximate cause can be admitted by a default. Under Rule 55, judgment can be entered without any hearing whatsoever if the amount of damages is fixed. Cf. *Ferraro v. Arthur M. Rosenberg Co.*, 156 F. 2d

212 (2nd Cir. 1946). If a plaintiff alleges that a defendant has proximately caused damages in a fixed amount, then clearly he is not required to submit further proof of proximate cause, since no hearing is required. It is only when the amount of damages is uncertain and unliquidated that a hearing must be held to fix the amount of damages. Furthermore, a plaintiff's proof of proximate cause may well require evidence in the possession of the defendant. To hold that a plaintiff must always prove proximate cause regardless of a default might allow a defendant to avoid a judgment by withholding such evidence, regardless of the sanctions of Rule 37.

Authorities applying state law, while also relatively scarce, also support this position. In *Putney v. DuBois Co.*, 226 S. W. 2d 737 (Mo. Ct. of App. 1950), proximate cause was deemed admitted by the default, and in other cases, a plaintiff was allowed to recover, apparently without offering proof of proximate cause. *State of Maryland v. Travelers Indemnity Co.*, 197 A. 2d 265 (Dist. of Col. Ct. of App. 1964); *Anderson v. Gallman*, 99 A. 2d 560 (Dist. of Col. Ct. of App. 1953); *Baltimore Transit Co. v. Mezzanotti*, 174 A. 2d 768 (Md. Ct. of App. 1961); *Osborn v. Gibson*, 309 S. W. 2d 15 (Mo. Ct. of App. 1958).

On the other hand, defendants (as in *Jones v. Uris*, *supra*) have been unable to cite any authority for the proposition that proximate cause, even if alleged, is not admitted by a default. The case of *E. V. Prentice Mach. Co. v. Associated Plywood Mills, Inc.*, 252 F. 2d 473 (9th Cir.), *cert. denied*, 356 U. S. 951 (1958), cited by defendants at p. 112 of their brief for the proposition that plaintiff must show proximate cause despite an admission of liability, is not in point. This was not a default case, and the defendant, while admitting a violation of the anti-

trust laws, specifically excluded the question of whether the plaintiff had suffered harm therefrom. Defendants' contention cannot be sustained, and plaintiff may rely on well-pleaded allegations in the complaint to establish proximate cause.

Insofar as required to explain the basis for award of damages in this Report, reference will be made in later sections hereof to other specific allegations of the complaint which are deemed to be well-pleaded. Unless a contrary conclusion is specified herein, all allegations of the complaint on which damages are awarded are taken by me to be well-pleaded.

Evidentiary Rulings

At the time that defendants tendered certain documents as their Exhibits 321, 322 and 323, judicial notice was taken of some portions (representing C.A.B. opinions and orders which were also contained in plaintiff's Exhibit 315), while decision was reserved as to the balance. Judicial notice will not be taken of these remaining documents.

For the most part, these remaining documents are motions, contracts and similar papers submitted to the C.A.B. in connection with the proceedings which resulted in the orders which have been noticed. Defendants have offered them either for admission into evidence or for judicial notice. Special memoranda of law have been submitted by both parties, and it is clear that defendants intend to use these documents to contest the allegations of the complaint, including paragraph 20 concerning conditions on the aircraft leases from Toolco to TWA. As indicated earlier, defendants do not have the right to introduce evidence to contest the allegations of the complaint as to liability, and

therefore the only question is whether these documents should be judicially noticed.

There is some question as to whether these documents are a proper subject for judicial notice. However, they will not be judicially noticed on grounds of relevance, even if they are viewed as otherwise fit for such notice. It is clear, as shown above, that judicial notice of these documents would at best be judicial notice of their existence and contents. It would not constitute judicial notice of the truth of what they contain. They would at best be mere evidence to be weighed with other evidence relating to such truth.

For judicial notice to be taken of a fact, the better view, in my opinion, is that such fact must be indisputable. While Wigmore in Volume 9 of *Wigmore on Evidence*, 3rd Ed., does take the position that a fact judicially noticed may be contested through the introduction of evidence and need not be indisputable, Morgan (in "The Law of Evidence, 1941-1945", 59 Harv. L. Rev. 481, 1946) takes the opposite view and holds that facts must be indisputable to be noticed. If indisputable, rebuttal evidence would be improper. McNaughton, in a preliminary draft of his proposed revision of Wigmore's chapter on judicial notice, accepts the Morgan view and holds that judicial notice should be limited to indisputable facts. McNaughton, "Judicial Notice—Excerpts Relating to the Morgan-Wigmore Controversy", 14 Vanderbilt L. Rev. 779 (1961). The distinction may not be of overriding importance in the normal case, since as a practical matter it may not make much difference whether the propriety of notice is argued before notice is taken or after. However, in a default case, the spirit of the Supreme Court cases dealing with the effect of a default and the rationale of Rule 37 require

that judicial notice not be used broadly to permit a contest on the merits of the complaint, and that judicial notice be limited to those facts which are indeed indisputable. It cannot be said that the facts recited in the documents submitted are indisputable, and that as a matter of law, plaintiff would not have been able to produce contradicting evidence. It must be remembered that in *Thomson v. Wooster*, the defendant was not permitted to introduce a government document (a patent) in his effort to dispute the allegations of the complaint. Even though that patent would have been strongly presumptive of the invalidity of a reissued patent, the court went to great lengths to point out hypothetical means by which the two might be reconciled.

Defendants also argue that the documents as to which decision was reserved should be noticed on the ground that they are necessary for a full understanding of those opinions of the C.A.B. which have been noticed. However, the meaning of these noticed opinions is clear on their face, and in any event, since they would not be sufficient to disprove the allegations of the complaint, there is no reason for further detailed elucidation.

Other C.A.B. documents which have been considered are those offered as Defendants' Exhibit 358A, B, C and D. These are reports filed by various airlines with the C.A.B. showing acquisition of aircraft, and are cited by defendants in an effort to disprove the allegations of the complaint concerning Toolco's engagement in the manufacture of aircraft (Defendants' brief, p. 56). Defendants' brief suggests at pp. 46-47 that plaintiff has objected to this exhibit. However, plaintiff did agree that the reports were appropriate for judicial notice (Tr. 9590), and although intimating that an objection might be made on other

grounds, no such objection was raised. This exhibit has been considered, but it is insufficient to disprove the allegations of the complaint, for the reasons set forth above.

Certain other C.A.B. documents were introduced which bore not on the issue of liability but rather on the amount of damages. Decision was reserved at the time as to these exhibits, Defendants' Exhibits Nos. 255, 259 and 261, which bear on the issue of overcapacity in the airline industry during the early 1960's when TWA claims that it should have had more jets. Exhibit 255 is a statement before the House Subcommittee on Appropriations on January 29, 1963 by the Chairman of the Civil Aeronautics Board. Exhibit 259 is a C.A.B. order relating to a United Air Lines fare proposal, and Exhibit 261 is a letter from the President of United Air Lines to the Chairman of the C.A.B. in response to that C.A.B. order. Judicial notice will be taken that Exhibits 255 and 259 were issued, and Exhibit 261 (which is of questionable standing for judicial notice) will be deemed admitted into evidence. Neither the Chairman of the C.A.B. nor the President of United were available for cross-examination, but their statements have been considered for their appropriate evidentiary worth.

One other ruling on an evidentiary matter was handled separately, at request of defendants' counsel. They requested a ruling prior to filing of briefs on the introduction into evidence of DX 364 for identification. On June 13, 1968, I sustained the plaintiff's objection to such introduction. Defendants' counsel in their brief have requested reconsideration of my ruling. I have reconsidered it in the light of said request, and adhere to my former ruling which is set forth below in full:

"During the hearing on damages (transcript page 10,698) defendants offered in evidence certain portions

of the deposition of Emmet Osborn Cocke, a director and officer of plaintiff Trans World Airlines, which were marked for identification as Defendants' Exhibit 364. This deposition had been taken in the course of the discovery proceedings prior to the entry of the default against defendants. Plaintiff objected to the receipt of Exhibit 364 into evidence, and a ruling on the objection was reserved by the Special Master. That objection is now sustained for the reasons set forth below.

"Although Rule 26(d)(2), F.R.C.P. permits the deposition of an officer or director of a party to be used by an adverse party 'for any purpose', Rule 26(d) nevertheless makes clear that a deposition may be used only 'so far as admissible under the rules of evidence.' To the extent that proffered evidence bears on the amount of damages, it is within the scope of the hearings on damages in this case and the normal rules of evidence apply. On issues of liability, however, the rules of evidence have been substantially modified by virtue of the default. As to liability, the default has admitted the well-pleaded allegations of the complaint, and allegations bearing on liability may be contested only within the limits set forth in Judge Metzner's opinion of November 16, 1965 (38 F.R.D. 499).

"An examination of the proffered pages of the Cocke deposition shows that they are concerned with issues of liability rather than the amount of damages. For the most part, they deal with the proposed merger between TWA and Northeast Airlines, certain aspects of TWA's jet acquisition program, and the circumstances surrounding the institution of the present anti-trust action. These proffered pages do not qualify for consideration on such issues of liability under the rules laid down in Judge Metzner's opinion.

"The only portion of Judge Metzner's opinion which might justify admission of Exhibit 364 is the reference in that opinion to 'uncontroverted material in the file

of the case.' There is substantial question whether this deposition represents 'uncontroverted' material and whether plaintiff had 'full opportunity to meet or controvert such material.' However, aside from this question, the deposition would not appear to be entitled to consideration. Mr. Cocke's deposition was not admitted into evidence prior to the default and does not constitute a part of the formal record in this case. If Mr. Cocke were called as a witness at this time, his testimony would be inadmissible because it would constitute a presentation of evidence on liability which is prohibited by the default. It is hard to see how Mr. Cocke's deposition can be admitted into evidence if his live testimony could not.

"There is also some question as to whether the deposition is admissible in light of the contention that plaintiff has had no adequate opportunity for cross examination, and a further question as to the relevance of many of the pages offered. However, there is no need to reach these questions in light of the considerations set forth above.

"The objection is sustained."

Other evidentiary rulings more appropriately appear hereafter in the discussion of the damage claims.

Damage Claims

The plaintiff's damage claims will now be discussed in the following Sections:

- I. Losses in operating profits due to inadequacy of jet fleet caused by delays in delivery and failure to deliver jets.
 - (A) International division losses.
 - (B) Domestic division losses.
 - (C) B-331B's.
 - (D) Mitigation claim.
 - (E) Adjustment in interest cost.
 - (F) Damages under Section I.
 - II. Losses due to being required to lease jets from Toolco instead of buying jets from the manufacturers.
 - III. Losses connected with financing the jets.
 - IV. Losses due to delay in disposal of displaced piston aircraft.
 - V. Losses due to disruption of business.
 - VI. Alternative over-all claim for damages based upon comparative profitability study.
 - VII. Interest on damage claim.
 - VIII. Recapitulation and final award.
- I. Losses in Operating Profits Due to Inadequacy of Jet Fleet***

The plaintiff has elected, in its damage claims, to present specific evidence of damages with respect to only a

portion of the allegations of the complaint. The damages claimed are confined to those said to stem from actions of the defendants in the period from early 1955 to the end of 1960 when the Hughes-dominated board of directors of TWA was replaced, for management purposes, by independent voting trustees. In its claim for damages due to the inadequacy of its jet fleet (Section I) the plaintiff takes the position that the main effect of these 1955-60 actions of the defendants was felt by TWA in a period beginning in 1959 (when the planes TWA "should have" ordered in 1955 would have begun being delivered in substantial numbers) through the end of 1963 (when TWA's independent management achieved "a more nearly adequate fleet"). While actions of the defendants at earlier periods are alleged in the complaint, they are referred to by the plaintiff in the damage proceedings primarily for background purposes.

The complaint states:

"During this period [in or about October 1955] when other United States-flag air carriers were placing orders for jet powered aircraft, and thereafter, the defendants caused and directed TWA to forego making any arrangements for the acquisition, by sale, lease or otherwise of any jet powered aircraft (par. 17) * * * TWA has further been injured in the following manner:

(a) TWA was prevented from obtaining jet powered aircraft and was deprived of opportunity for adequate use of jet powered aircraft during the years 1958, 1959, 1960 and to date with a resultant loss in profits." (par. 52)

The complaint (pars. 9 and 10) also alleges that these actions of the defendants resulted from and were in furtherance of defendants' antitrust offenses.

It is undisputed that by 1955 aircraft manufacturers including Boeing and Douglas had prepared plans and drawings for the manufacture by themselves of jet powered aircraft intended for commercial use. At the same time the major U.S. air carriers were devoting substantial efforts to determine whether and how the jet powered aircraft then being developed by Boeing, Douglas or others could be best utilized by them.

Commercial jet aircraft concededly have a very great competitive advantage over piston aircraft or turbo-prop aircraft both in speed, comfort, efficiency and operating costs. From the first introduction of the jets into commercial service, passengers having the choice have chosen to travel by jet rather than by piston aircraft.

The principal witness of the plaintiff in support of its damage claim for loss in operating profits due to inadequacy of its jet fleet was Mr. Robert W. Rummel, Vice President, Planning and Research, of TWA. He joined TWA as a senior engineer in charge of new aircraft studies and future fleet planning in 1943. He became Chief Engineer of TWA in 1949 and held that position until 1956, when he was elected Vice President, Engineering. In 1959 he was appointed to his present position of Vice President, Planning and Research. From 1956 through 1960 he was also employed by Toolco as a consultant and special representative in connection with the acquisition of jet aircraft from Boeing and Convair, and the acquisition of jet engines. As Toolco's special representative during that period he reported directly to Hughes. He had authority to commit funds under Toolco contracts, and the Toolco factory representatives at Boeing and Convair reported to him as special representative of Toolco responsible for the technical administration of the Toolco contracts with such manufacturers (TWA Ex. 2).

Rummel testified that since 1943 he had been actively engaged in all of TWA's major aircraft procurement programs and had been intimately concerned both with the aircraft actually acquired through Toolco and also with aircraft which TWA considered for procurement. He stated that his activities included negotiations with aircraft manufacturers with respect to technical specifications, performance characteristics, provisioning and spare parts, delivery schedules and acceptance tests. He was cross-examined extensively as to his qualifications as an expert. I find him qualified as an expert in these fields. I reserved decision on the admissibility of his prepared testimony (TWA Ex. 2) until I had an opportunity again to review it in the light of the case as a whole.

In accordance with the foregoing discussion of the effect of the default, defendants' general objections (Nos. 1 and 2) to the testimony of Rummel, which were also reasserted as to plaintiff's other witnesses, are overruled. The first objection was founded on the argument that plaintiff had the burden of proving all allegations which were omitted by Special Master Rankin in his Interim Findings, and the second objection was based on the argument that plaintiff bore the burden of introducing evidence to prove proximate cause, regardless of the default. Neither of these positions can be sustained, for the reasons set forth above. Decision had also been reserved as to certain of the specific objections in part 3 of the objections to the testimony of Rummel (specific objections 4, 5(a), 10, 11, 12, 13, 14, 15, 18, 19 and 21), and these objections are also hereby overruled.

Similarly, I reserved decision on the admissibility of the prepared testimony of the witnesses for the defendants. I now rule that such testimony is likewise admitted into evidence. I likewise decide that the experts called by

the plaintiff and defendants as witnesses in these proceedings were qualified for the purposes for which they appeared.

Rummel testified that although TWA's principal competitors, both on domestic routes and on international routes, were engaged in serious negotiations for acquisition of jet aircraft either with Boeing or Douglas during the last six months of 1955, TWA and Toolco, which were during this period in all respects closely controlled in aircraft procurement matters by Hughes personally, did not engage in negotiations reasonably calculated to preserve TWA's competitive position in the industry for early deliveries of jet aircraft. Rummel also testified that he had recommended negotiations with Boeing before and during this period for acquisition of a jet fleet for TWA, but that Hughes did not authorize negotiations with Douglas and informed Boeing that Toolco and TWA were interested in ordering the Boeing jets only if Toolco could obtain a large priority in delivery positions (vis-a-vis its competitors). He also testified that Boeing refused this demand on the ground that it would wreck its commercial program.

Rummel testified that in general the major air carriers which placed orders first obtained the most advantageous delivery positions. He stated that in order for TWA to obtain competitive equality in early jet deliveries, TWA, Pan-Am and American Airlines, Inc. (American) would have had to commence and continue serious negotiations looking toward a commitment with Boeing for long range jets at about the same time; also, all three carriers would have had to have placed orders for these Boeing aircraft at about the same time. He stated that "at about the same time" does not mean that the actual signing of contracts or letters of intent must be simultaneous, since execution

of such formal documents is not the significant factor; and that minor differences in final contract dates are not significant so long as the negotiations have been substantially contemporaneous. He also testified that the size of the order would play a role in priority of delivery positions; that in fact the major carriers did place large orders and got priority of deliveries; and that a carrier's potential total order was more important than the size of the first order. He testified in detail, as hereinafter set forth, as to his estimate of the delivery dates that the plaintiff could have achieved and would have achieved if it had not been prevented by the defendants from ordering jets during the period under consideration.

The defendants have failed to disprove, in any manner open to them in the light of their default, that they prevented TWA from entering into negotiations with Boeing as alleged in the complaint or that Toolco failed seriously to negotiate with manufacturers during the latter half of 1955, all contrary to Rummel's advice and to TWA's demonstrable competitive needs, with the result of keeping TWA from ever getting as favorable delivery positions for long-range jets as those obtained by TWA's principal competitors in the years in question.

Mr. Ralph Damon, the then President of TWA, advised the Board of Directors of TWA on December 9, 1955 of the substantial orders for jets by TWA's principal competitors and pointed out that these jets would be coming into competition with TWA possibly in 1959 and surely in 1960 and 1961, at which time "Every airplane which TWA now owns or has on order or option will be either totally obsolete or heavily outclassed in speed, comfort, passenger acceptability and economics on competitive routes." (DX 44).

In his report to the Board he also predicted that any airline which did not have comparable equipment by that time would be practically out of business soon thereafter. Rummel testified that Damon had been kept out of any participation in the consideration of jet equipment by Hughes.

Hughes finally authorized negotiations with Boeing for acquisition of jets, presumably for TWA, in late December 1955. A protective order for eight delivery positions for Toolco for B-131s was secured from Boeing on January 6, 1956 (D Ex. 47). A contract for eighteen B-331s was entered into on March 19, 1956. Additional B-131 jets were ordered in a series of contracts entered into between March 2, 1956 and January 10, 1957, with an ultimate total of fifteen (TWA Ex. 2, p. 8; Ex. R-1; Ex. R-2; D Ex. 66, 67). The numbers of B-331s and B-131s finally fixed upon were based upon discussions between Rummel and Hughes as to the proper number of Boeing aircraft for TWA's foreseeable needs for long range jets as of that date.

The delivery dates for these Boeing jets were later than those obtained by the plaintiff's chief competitors. These aircraft moreover were not to be purchased by TWA but were to be purchased by Toolco, with Toolco retaining the power to make a later decision as to their ultimate use and destination.

Later, in April 1956, Hughes caused Toolco to enter into a contract with Convair for thirty CV-880 medium range jet aircraft which had been recommended to him by Rummel for inclusion in TWA's projected jet fleet. (See complaint par. 17.) Here again Toolco retained the power to make a later decision as to whether the planes would go to TWA (TWA Ex. R-3, R-4.) The plaintiff does not complain that the medium range jets should have been ordered earlier but

does allege that the defendants interfered with the production of the planes and caused late deliveries of some of the jets and diverted others of them to Northeast and prevented delivery to TWA of still others.

Experts for both plaintiff and the defendants submitted estimates of the changes in TWA's operating revenues and expenses which would have occurred if the additional aircraft had been secured and the existing aircraft had been delivered earlier. Their estimates were made on the basis of the following premises:

(a) TWA would have received six additional Boeing B-331 aircraft (long range jet aircraft suitable for non-stop trans-Atlantic operations) which were diverted to Pan-Am.

(b) Fifteen Boeing B-131 aircraft (a slightly shorter range jet suitable for trans-continental operations but not well suited for trans-Atlantic operations) and twelve B-331 aircraft, which were actually received by TWA, would have been received on earlier delivery dates.

(c) Twenty CV-880 aircraft, which TWA actually received, would have been received on earlier delivery dates.

(d) Ten additional CV-880's would have been received.

Estimates of the delivery dates for the additional Boeing and Convair aircraft in categories (a) and (d) and of the earlier "reconstructed" delivery dates for the aircraft in categories (b) and (c) were prepared by Rummel. The B-131 and CV-880 aircraft were all used in TWA's domestic operations, and the delivery dates are discussed in the section of this opinion dealing with domestic operations. The B-331 aircraft were used in both international and domestic operations. As to these, Rummel prepared a table

showing the improvement in delivery position he estimated that TWA would have achieved, taking into account both the six additional planes (which had been diverted to Pan-Am) and the delays in delivery of the twelve other Boeing B-331 jets. The table, shown below, lists in the first column the actual receipt date for the twelve B-331's by TWA and the actual receipt dates for the six additional B-331's by Pan-Am. Since all eighteen were part of the original Toolco contracts with Boeing, the delivery dates for all eighteen would have been advanced by making timely orders. The actual delivery dates were earlier than the contract delivery dates, so are used by the plaintiff in computing its damage estimates. Opposite each "actual receipt date" is the "reconstructed earlier receipt date" fixed by Mr. Rummel on the assumptions hereinafter described.

Actual Receipt Date	Reconstructed Earlier Receipt Date
*November 5, 1959	*July 19, 1959
November 10, 1959	August 22, 1959
November 10, 1959	August 28, 1959
November 25, 1959	September 22, 1959
*December 15, 1959	*October 6, 1959
December 23, 1959	October 27, 1959
*December 30, 1959	*November 5, 1959
January 18, 1960	November 10, 1959
*March 23, 1960	*December 15, 1959
April 1, 1960	December 30, 1959
April 5, 1960	January 18, 1960
April 14, 1960	February 29, 1960
*April 29, 1960	*March 23, 1960
May 9, 1960	April 26, 1960
May 25, 1960	April 29, 1960
*June 8, 1960	*May 9, 1960
July 1, 1960	June 8, 1960
July 1, 1960	July 1, 1960

* Diverted to Pan-Am

(In the case of two of the planes, Toolco failed to make payment when they were ready for delivery so the "ready for delivery" date is used in the above table rather than the "actual receipt" date.)

Since the B-331 aircraft were used by TWA in both international and domestic operations, the added availability of these planes was allocated between the international and domestic operations of TWA in the same proportion as the allocation actually made by TWA of its B-331 aircraft during this period. The details of this allocation of the additional B-331 availability are shown in the sections of this report dealing with TWA's international and domestic operations. As to responsibility for diversion of the six B-331 aircraft to Pan American, I have already rejected defendants' argument that ratification of the assignment by the Hughes-dominated TWA Board of Directors is sufficient, under the rules of the default, to relieve defendants of responsibility for this portion of plaintiff's claim.

The Rummel testimony was corroborated in many significant aspects by the testimony of Mr. J. B. Connelly, Vice President and Assistant General Manager of Boeing's Aircraft Division. (TWA Ex. 3) Connelly testified that he was familiar with the development, production, sales and deliveries of commercial jet aircraft by Boeing during the period 1954 to 1961 and in particular the jet aircraft known as the Boeing 707-120 and the Boeing 707-320 series.

The policies followed by Boeing concerning the sale of commercial jet aircraft to commercial air carriers throughout the period 1955 to 1961 were testified to by Connelly. He testified that he participated in and was generally familiar with the negotiations between Boeing and Pan-Am, between Boeing and American and between Boeing and Toolco as well as other air carriers. He stated that in 1955

Boeing wished to sell substantial numbers of 707 jet aircraft to TWA. This included the 707-330 Series, long-range jets suitable for TWA international service. (The configuration later chosen from this Series for TWA's use was designated as B-331.) It also included the 707-120 Series, suitable for transcontinental service. (The configuration in this Series chosen for TWA was B-131.)

Connelly testified that Boeing would have afforded TWA substantially as early delivery positions as those afforded to other customers of comparable interest to Boeing. He stated specifically that had TWA commenced negotiations and ordered jet aircraft comparable in number to those ordered by Pan-Am and American, respectively, at about the same time as such other customers ordered jet aircraft from Boeing, Boeing would have afforded TWA substantial equality in early delivery positions with Pan-Am and American. He stated that Boeing would have sought to provide substantial equality of early delivery positions as between Pan-Am and TWA for planes used primarily on international routes and substantial equality of early delivery positions as between American and TWA as to aircraft used primarily on domestic routes. He stated that Boeing would have agreed, assuming that TWA had placed such orders, to deliver and would have delivered to TWA jets of the B-120 and B-320 Series earlier than such aircraft were in fact delivered under the Boeing agreements with Toolco. He further testified that he had examined the "Statement of Improvement of Delivery Positions", prepared by Rummel and hereinafter discussed, and expressed the opinion that it constituted a reasonable estimate of the improvement in delivery positions which TWA would have obtained. With reference to the six B-331 jets which were originally ordered by Toolco and were later

delivered by action of Toolco to Pan-Am instead of TWA, Connelly corroborated the testimony of Rummel as to the earliest delivery positions Pan-Am could have obtained from Boeing for six such jets if they had been ordered from Boeing in July 1959. The Connelly testimony was not seriously controverted.

The Rummel and Connelly testimony reinforce the above-quoted allegations of the complaint in respect of the inadequacy of the plaintiff's long range jet fleet caused by action of the defendants.

In view of the fact that the "reconstructed" TWA possessed six additional Boeing B-331 jets and ten additional CV-880 jets, it was assumed that this larger fleet would have rendered unnecessary certain additions to the TWA fleet which were made when the management of TWA was turned over from the Hughes interests to independent voting trustees in December 1960. It was assumed that TWA would not have acquired five B-331B (fan jet) aircraft which it leased in 1962 and 1963, and that it would not have acquired six CV-880 aircraft which it purchased in 1963. However, it was assumed that even with the larger "reconstructed" fleet, TWA would nevertheless have acquired the four B-720B aircraft (a later model Boeing medium range jet) which were leased during 1961 and 1962, and would also have purchased the eighteen additional B-131B aircraft (fan jets) which it received in 1962.

The foregoing assumptions, which set forth a hypothetical jet fleet for TWA in 1959-1963, constitute the basic equipment premises for the estimates of the expert witnesses for both plaintiff and defendants. As to the piston fleet which would have been operated by TWA during this period, each expert made such adjustments in TWA's actual piston operations as, in his opinion, would have accompanied the hypothesized jet operations.

Defendants argue that there is no certainty that the hypothetical jet fleet recommended by Rummel, which forms the basis for that part of the plaintiff's damage claims due to inadequacy of its jet fleet, would in fact have been implemented by the plaintiff under an independent management. They stress that Rummel was not chief executive officer of TWA nor in any position to impose his equipment views on the Board of Directors. They cite various inter-office memoranda, introduced into evidence, indicating that there was a running exchange of comments, and differing opinions, among TWA officers and staff members from time to time over the types and amounts of jet equipment to be purchased. Defendants also introduced in evidence various opinions expressed by CAB officials, trade magazine editors and airline executives, including some TWA officials, to the effect that airlines may have overbought jet equipment capacity and would suffer adverse financial consequences if they did not cut back their jet programs. They conclude that the plaintiff's expert testimony is too speculative to be accepted as a basis for damages.

Given the well-pleaded allegations of the complaint, however, the testimony of Rummel, who was chief procurement officer for the plaintiff at the time and an equipment procurement representative of Hughes, as well as the Connolly testimony, and the evidence that the assumed additional fleets of B-331s, B-131s and CV-880s were in fact ordered in the same type and quantity by a Hughes-dominated TWA, although at later dates, I am of the opinion that the hypothetical jet fleet and reconstructed delivery dates constitute a proper basis for computing damages under this Section I. The evidence of the plaintiff's experts as to the reconstructed jet fleet is well within the standards of distinctness and positiveness of proof allowable in default sit-

nations under the doctrine of *Bigelow v. RKO Radio Pictures, Inc.*, 327 U.S. 251 (1946).

By way of orientation for the detailed discussion which follows showing the methodology used by the various experts in making up their estimates of damages due to the inadequacy of TWA's jet fleet, it should be stated at this point that estimation of the changes in TWA's operating revenues requires a consideration both of the added revenues and costs that would have accompanied additional jet operations and of the decreased revenues and costs that would have resulted from eliminated piston operations. The estimates of revenues and costs produced by the plaintiff's experts and the defendants' experts were dramatically different (see Tables pp. 59 and 83). The plaintiff's experts estimated that TWA would have experienced an increase in net operating profits after appropriate adjustment for depreciation for the years 1959 through 1963 in the amount of 51.7 million dollars, whereas the defendants' experts estimated that if TWA had acquired and operated the hypothetical jet fleet as assumed by the plaintiff, it would have experienced a decrease in net operating profits after depreciation adjustments for these same years, of 95.91 million dollars. The defendants' brief states at page 220:

"It was not, of course, Simat's [expert witness of defendants'] opinion that the management of reconstructed TWA would have permitted such staggering losses to accumulate. Management could have drastically cut schedules . . . but while such measures might have avoided the dire consequences of operating Wemple's [expert witness of plaintiff] added plane miles, they would not have sufficed to put the added fleet in the black."

At this point I shall separate the claims of the plaintiff with respect to the adequacy of its jet fleet into divisions

A and B, i.e., between claims for loss of operating profits of its International Division and claims for loss of operating profits of its Domestic Division.

(A) *International Division*

It will be useful, I believe, from time to time while reading the ensuing discussion as to the International Division to refer to the table which follows, comparing the amounts of the estimates of experts retained by the plaintiff and defendants. The table is a portion of plaintiff's Ex. 420 (Sch. C).

(Table reproduced on following page)

As to the International Division, the plaintiff's claim as shown on foregoing Table is for \$22.4 million damages. It may usefully be divided into two parts. First, the reduction of the plaintiff's projected Boeing jet fleet by the conceded diversion of six of the eighteen B-331 jets by action of Toolco to Pan-Am, TWA's principal transatlantic competitor, at a time when fierce competition existed for the lead in the jet service on international routes (cf. complaint, pars. 9, 10). The amount of damages claimed by reason of this diversion is \$17.6 million. Second, the delays in the delivery of that fraction of the B-331 jets assigned to the International Division which resulted from the original equipment orders being delayed by Toolco until after the earliest delivery positions for the long range jets had been preempted by Pan-Am. This second claim is for \$4.8 million.

SCHEDULE C
INTERNATIONAL
C&C AND SHE

T R A N S W O R L D A I R L I N E S, I N C.

COMPARISON OF CHANGE IN INTERNATIONAL OPERATING PROFITS IN REPORTS OF
COVERDALE & COLPITTS AND SIMAT, HELLIESEN & EICHNER, INC. (REVISED)

(Amounts in millions)

	6 additional B331's			Earlier receipt of B131's and B331's			T o t a l		
	II-6 (1959-1963)			III-4 (1959-1960)					
	C&C	SHE	*	C&C	SHE	*	C&C	SHE	*
Transportation revenues:									
Passenger revenues	\$74.70	\$40.51	\$34.19	\$10.30	\$4.59	\$5.71	\$85.00	\$45.10	\$39.90
Other	3.70	2.02	1.68	.60	.23	.37	4.30	2.25	2.05
Rounding									
Total transportation revenues	78.40	42.53	35.87	10.90	4.82	6.08	89.30	47.35	41.95
Operating expenses:									
Flying operations	9.90	)		.60	)		10.50)	
Direct maintenance	4.80	17.80)	.40	.40	1.10)		5.20	18.90)	.40
Applied maintenance burden	3.50	)		.10	)		3.60)	
Insurance	1.70	1.59	.11	.20	.14	.06	1.90	1.73	.17
Depreciation - jet aircraft	11.10	11.10		1.30	1.30		12.40	12.40	
Rounding									
	31.00	30.49	.51	2.60	2.54	.06	33.60	33.03	.57
Aircraft servicing	3.50	5.34	(1.84)	.20	.36	(.16)	3.70	5.70	(2.00)
Stewardess and related costs	6.10	2.35)	1.58	.60	.13)	.22	6.70	2.48)	1.80
Other passenger servicing	2.40	2.17)	.87	.30	.25)	.12	2.70	2.42)	.99
Traffic servicing	2.40	1.53	.87	.30	.18	.12	2.70	1.71	.99
Servicing administration	.50	.60	(.10)		.05	(.05)	.50	.65	(.15)
Reservation and sales	9.00	6.75	2.25	1.20	.76	.44	10.20	7.51	2.69
Advertising and publicity	4.40	2.46	1.94	.50	.21	.29	4.90	2.67	2.23
General and administrative	2.50	2.26	.24	.30	.15	.15	2.80	2.41	.39
Ground equipment maintenance and depreciation		.82	(.82)	.20	.03	.17	.20	.85	(.65)
Rounding					.01	(.01)		.01	(.01)
	28.40	24.28	4.12	3.30	2.13	1.17	31.70	26.41	5.29
Expenses covered in both reports	59.40	54.77	4.63	5.90	4.67	1.23	65.30	59.44	5.86
Depreciation - piston aircraft		(2.87)	2.87*		(.63)	.63		(3.50)	3.50
Amortization	1.40	1.40		.20	.20		1.60		1.60
Total operating expenses	60.80	51.90	8.90	6.10	4.04	2.06	66.90	55.94	10.96
Change in operating profits	\$17.60 (\$ 9.37)	\$26.97		\$ 4.80 \$.78	\$4.02		\$22.40 (\$ 8.59)	\$30.99	

*C&C over (under) SHE.

Source: Comparison of change in operating profits in reports of Coverdale & Colpitts and Simat, Helliesen & Eichner, Inc. (Revised), TWA Exhibit 345A, pages as indicated above.

Revenues—First Part

The plaintiff retained the firms of Coverdale & Colpitts (sometimes referred to as "Coverdale") and Price Waterhouse & Co. to calculate the change in operating profits based upon the foregoing assumptions.

Coverdale, with its predecessor firm, is a nationally known firm providing consulting engineering and financial services to industry and government. It conducts industrial studies involving mergers and reorganizations, management appraisals, transportation and product pricing analyses, plant location and operations studies. These studies have included all forms of transportation including air transportation. The Coverdale study in this case was presented through the direct testimony of Edward L. Wemple who has been a partner in the Coverdale firm since 1956. Studies in the airline field which have been made under his supervision have included analyses of operations programs for TWA, Flying Tiger Line and British Overseas Airways, as well as traffic and revenue studies for various airports, including O'Hare International Airport. He is a member of the American Institute of Consulting Engineers.

Before discussing the Coverdale report on the additional B-331 planes, it should be remembered that these planes were assumed to have obviated the leasing of five B-331B aircraft in 1962-1963. The international service actually operated with the B-331B aircraft were assumed to be performed by the additional B-331's. Revenue and cost figures were adjusted accordingly by all expert witnesses.

The Coverdale estimate of changes in operating profits relating to the six diverted B-331s will now be summarized. It starts with a computation from TWA equipment records of the annual average number of additional B-331 Boeing

jets that would have been available for commercial service for the International Division if there had been no transfer of the six B-331s to Pan-Am by action of Toolco and these planes had been in TWA's service (a jet in service for one-tenth of a year would show as one-tenth of a jet in the annualized figures):

The computation of such annual average number of additional jets is as follows:

1959	0.2 B-331s
1960	3.6 "
1961	3.7 "
1962	4.8 "
1963	0.9 "

Coverdale relied on actual TWA experience as to the time ordinarily elapsing between the date of receipt of a plane and the date of commencing service in fixing the date when an aircraft was "available for commercial service." Aircraft "available for commercial service" is a term which is defined to include not only aircraft actually employed in revenue-producing activities, but all other owned or leased aircraft on hand, once commercial service has been inaugurated with aircraft of the same type. (See TWA Ex. 4(c)(4), Ex. B, C; Tr. 4653-62, 4695-4703.) Thus the term includes aircraft not overhauled, aircraft being used for pilot training activity and other similar non-productive aircraft.

Coverdale assumed that an increase in the number of aircraft available for commercial service would produce a proportionate increase in plane miles flown, thus allowing for maintenance, training and other non-productive employment of the additional aircraft on a basis exactly proportionate to TWA's historical experience in the same year with aircraft of the same type. The Coverdale computa-

tions also implicitly assume that in any given year additional aircraft of any type would be employed in operations substantially similar in kind to those in which aircraft of the same type were employed by TWA in the same year.

The assumed additional aircraft available for commercial service in the International Division would have produced additional passenger revenue jet plane miles, as follows:

1959	0.1 million miles
1960	6.3 " "
1961	6.6 " "
1962	8.4 " "
1963	1.5 " "

The estimates of these additional jet plane miles were obtained by applying the experienced annual utilization for the B-331s in a particular year to the assumed additional availability of that type of jet in the same year.

Coverdale then estimated the corresponding reduction of the number of piston aircraft miles. This estimate was based on determining the ratio between the increase in all jet plane miles flown historically in the International Division in a given year over those flown in the preceding year, and the decrease in all piston plane miles flown in this Division between the same two years, and estimating that a further increase in jet plane miles would have produced a further and proportionate decrease in piston plane miles for that year.

The corresponding reduction of piston passenger revenue plane miles was as follows:

1959	0.1 million miles
1960	5.1 " "
1961	1.6 " "

These reductions would have been piston plane miles flown by Lockheed L-1649As and are obtained by applying

to the experienced annual utilization for the L-1649As in a particular year in the International Division their assumed lesser availability in that year.

The ratio of the number of transatlantic flights to millions of plane miles being fairly uniform, the number of assumed increased transatlantic flights was then computed on a basis directly proportionate to the net increase in plane miles; and on the basis of seating capacity of the B-331 aircraft, the number of increased available seats was computed, with the following results:

	Additional Flights	Additional Available Seats
1959	—	1.1 thousands
1960	228	89.1 “
1961	987	154.3 “
1962	1,793	251.0 “
1963	311	44.0 “

The additional seats in 1959 resulted from using aircraft of greater seating capacity, even though the number of flights remained the same.

The international operations of TWA consisted of transatlantic flights and continuation of certain of these flights “beyond the gateway” (the gateway being the point at which the eastward transatlantic flight made its first European stop). It was conceded there is no source to obtain the industry figures for the number of “beyond the gateway” scheduled passengers (Tr. 8498). It was accordingly assumed by Coverdale that increased TWA service for the International Division would have been divided between scheduled transatlantic operations and other international operations as historically divided.

During the years in question, the figures submitted by the plaintiff's experts showed a very close correlation between TWA's percentage of the total available transatlantic seats

and its percentage of total transatlantic passengers on all airlines constituting the members of the International Airline Transportation Association (IATA). Their estimate of additional TWA transatlantic passengers which would have been obtained is therefore obtained by taking the increased percentage of seats and proportionately increasing the number of passengers.

Here it should be noted that in estimates for 1959-60, the additional seats offered by TWA would have been, in effect, a transfer of seats from Pan-Am to TWA, because TWA's additional aircraft would have been transfers of the six diverted B-331s from Pan-Am and there would have been no increase in the total U. S.-airline available transatlantic seats; but since Pan-Am could have obtained delivery of other similar jets from manufacturers in the spring of 1961, the annual total numbers of transatlantic seats available for the years 1961, 1962 and 1963 were assumed by the plaintiff to have been increased by the number of additional seats that would have been offered by TWA.

The industry competitive factors in 1959-60 were markedly different in international travel from the 1961-63 period. Notice of these differences is taken in discussing damage theories hereinafter.

The calculation of TWA's additional transatlantic passengers in accordance with the above premises produced the following results:

	Actual Passengers	Revised Number of Passengers
1959	146 thousand	147 thousand*
1960	243 "	298 "
1961	208 "	275 "
1962	277 "	382 "
1963	359 "	377 "

There were then computed the additional revenues which would have been received by TWA in respect of these additional passengers. This was done by taking the actual International Division passenger revenues for each of the five years in question and increasing them by the same percentage as the increase in the number of TWA transatlantic passengers for each year in question.

The additional passenger revenues, so calculated, are as follows:

1959	\$ 0.6	million
1960	18.9	"
1961	20.4	"
1962	29.5	"
1963	5.3	"

There was additional assumed revenue from mail, express, freight and excess baggage which all experts estimated at 5% of the assumed additional passenger revenue. The total estimated additional revenue from the assumed six additional B-331s was therefore \$78.4 million for the International Division.

Hereafter we will discuss the estimates of the plaintiff's experts as to the amount of attendant increased operating expenses which amounted to \$60.8 million leaving the net additional revenue of \$17.6 million as the amount of the plaintiff's damage claim for the International Division with respect to the six additional B-331s transferred by reason of the action of Toolco to Pan-Am. Before reviewing the estimates for operating expenses, however, we will first discuss the computations of the defendants' experts with respect to the change in operating revenues related to the International Division from these six assumed additional B-331s.

The defendants retained as their experts to analyze the Coverdale estimates, and to prepare their own estimates

of changes in operating profits, the firm of Simat, Helliesen & Eichner, Inc. (sometimes referred to as "Simat").

The report of Simat was presented through direct testimony of Messrs. Nathan S. Simat, Robert L. Helliesen and L. John Eichner, officers of that organization. The Simat organization was formed in 1963 and engages in economic and transportation studies for government and private clients. It has conducted studies for various air carriers from every sector of the air transport industry. Simat was for many years employed by the Civil Aeronautics Board as a transportation economist. As Head Economist of the Analysis Division of the CAB, he prepared numerous operating and financial analyses dealing with air traffic, revenues and costs, feasibility of equipment purchase programs and he appeared in numerous commercial rate and mail proceedings. As Chief of the Certificates Section of the Routes Division of the CAB he prepared or supervised the preparation of studies dealing with the economic consequences of adding and deleting air services. He has acted in management and economic consulting capacities for Northeast Airlines and Sabena Belgian World Airlines.

Helliesen was for some years employed by American Airlines, Inc. in various economics and marketing capacities and held the office of Director of Schedule Planning and Business Research in that company. He has done economic research for the Air Transport Association of America in connection with the CAB general passenger fare investigation and has also been retained by the Convair Division of General Dynamics. He formed the Aircraft Exchange, which provided regular market reports of bids and offers for the purchase, sale and lease of used transport aircraft, and served as its head in 1958-1962. He joined the Simat organization in 1965.

Eichner served in responsible positions with Capital Airlines, Trans-Texas Airlines and from 1961 to 1966 was Assistant Vice President of Corporate Planning for American Airlines, Inc., where his duties included the preparation of special studies and forecast of revenues, expenses and ground facilities for various types of air equipment. He joined the Simat organization in 1966.

The Simat report assumed the same reconstructed earlier delivery dates for the jet equipment as the Coverdale report, and assumed all the other equipment assumptions of the Coverdale report, so that the size of the hypothetical jet fleet in both reports for the five year period 1959-1963 is identical. The defendants' experts used the Coverdale estimates for the number of added and deleted aircraft and aircraft miles and further used the assumption that all deleted piston aircraft services in TWA International Division had been operated with L-1649A aircraft. They also testified that it was not unreasonable to use the percentage share of available IATA transatlantic seats as a guide for estimating TWA's percentage share of transatlantic passengers and accordingly used the same number of TWA transatlantic seats assumed to be added.

It was their opinion, however, that Coverdale's estimate that TWA could increase its share of available transatlantic seats was erroneous. Simat's opinion was that the transatlantic market is the leading international air travel market in the world and the object of vigorous competition by nearly 20 air carriers exclusive of supplemental and charter carriers and that it was difficult, if not impossible, to conceive of a market where a likelihood of unilateral competitive action without response from other carriers in the market, is more remote.

Under this theory of "competitive response" developed by defendants' experts, and more fully stated hereafter, the reconstructed estimates for additional transatlantic passengers by Simat were:

1959	146 thousand
1960	281 "
1961	255 "
1962	343 "
1963	368 "

The opinion of Simat on this theory of competitive response was that Pan-Am, as TWA's principal transatlantic competitor, would have taken some of its long range jets off of its other international flights to maintain its "historic ratio" of available transatlantic seats vis-a-vis TWA, or else it would have retained some of the piston seats which were historically retired, or both. Simat was also of the opinion that foreign airlines would have likewise responded competitively. He selected the second and third quarters of the years 1960-63 (omitting the first and fourth quarters when various airlines observed different policies in the seasonal reduction of weekly frequencies) and noted that in these selected quarterly periods, for each flight (including pistons as well as jets) added by TWA, the following "pattern of competitive response" in annualized average additional planes was shown in 1960, 1961, 1962 and 1963: In the second quarter of said years Pan-Am added .07, 1.3, 2.1 and 1.9; foreign flag carriers added 3.3, 4.2, 5.4 and 5.3; and in the third quarter of said years Pan-Am added 1.7, 1.8, 2.5 and 2.7; foreign flag carriers added 4.4, 5.0, 4.4 and 6.4.

It will be illuminating to discuss the defendants' arguments separately for the 1959-60 period and for the 1961-63 period.

Simat estimated that in 1959 Pan-Am would have transferred .04 jet aircraft (on an annualized basis) to the transatlantic service from its other international routes but that the foreign competitors, since it was assumed that no increase in the total transatlantic service of U.S. airlines would be involved, would not have responded competitively. For 1960 Simat first estimated that for each flight added by TWA, Pan-Am would have responded competitively by adding one flight and other foreign competitors taken as a group would have responded by adding one flight; but since he did not assume that the additional seats generated by TWA through the replacement of piston flights by jet flights would have engendered a competitive response, he adjusted his estimates of competitive responses to the net addition of .85 transatlantic seats by Pan-Am and the same by the other IATA carriers for each seat that would have been added by TWA.

Conclusions as to Revenue Estimates

The severe worldwide shortage of jet equipment through 1960 was such in my opinion, as to make the assumed transatlantic competitive response unrealistic for the 1959-60 period. It is reasonable to assume that TWA's usage of the six diverted B-331s would have been proportionately the same as its usage of the curtailed fleet it did acquire, and thus that approximately one-third of the diverted six B-331s would have been used domestically by TWA. The total U.S. airline competition on the transatlantic route would thus have involved the use of two fewer jets during these years, thus appearing to rule out any probability of "competitive response" from foreign lines. As to Pan-American, piston aircraft with their higher cost and lower attractiveness were in no position to compete effectively

against jets. On cross-examination of Simat, it was brought out that essentially there was no "historical pattern" of response by competitors to additional TWA transatlantic service. The ratio of such TWA to Pan-American service, for example, varied from 53% to 82% in the years leading up to introduction of the jets (Tr. 8378).

Also it was shown that in 1960 TWA historically increased its percentage of transatlantic seats vis-a-vis Pan-Am, without competitive response, indicating that Pan-Am made a management decision that it preferred to use many of its jets on other international services to maintain or improve its position there. If Pan-Am had not received the diverted planes, it presumably would have been in an even less favorable position to exert a "competitive response" on the transatlantic service during the years in question. Pan-Am faced jet competition, for example, on the Pacific routes where Qantas and BOAC were operating jets. When Pan-American did receive B-331s in quantity, it transferred the B-131s theretofore used on the transatlantic service to the Caribbean service, thus further indicating the need on its part to distribute its jet equipment on a worldwide basis. All airlines dropped piston service on transatlantic routes as jets became available, because of customer preference for jets.

Finally, no testimony was introduced as to the effect financially on the other worldwide operations of TWA's transatlantic competitors of transfer of jet service from these other international operations to the transatlantic route. In the absence of such figures, and considering the facts summarized above, it appears to be sheer speculation to conclude that the managements of the competing airlines would have automatically made a competitive response in any given ratio to the changed conditions on the transatlantic route.

Support for this conclusion also may be found in an examination of Pan Am's Pacific operations and a comparison of the profitability of these operations with Pan Am's Atlantic operations. The table below, comparing Pan Am's Pacific and Atlantic divisions for both seat miles and operating profit, is taken from statistics in the C.A.B. *Handbook of Airline Statistics* 1965 Edition, which has been frequently relied on by both sides. This comparison shows that in the years in question, except for transition year 1959, Pan Am's Pacific operations were far more productive on a revenue per seat mile basis than were its Atlantic operations. It cannot be lightly assumed that Pan Am would have sacrificed its earnings on the Pacific in order to match T.W.A. flight increases on the less profitable Atlantic route.

COMPARISON OF PAN AM PACIFIC AND ATLANTIC OPERATIONS

(000's omitted)

	PACIFIC DIVISION		ATLANTIC DIVISION	
	Seat Miles (000)	Operating Profit (\$000)	Seat Miles (000)	Operating Profit (\$000)
1959	1,397,428	5,557	2,447,837	17,469
1960	2,108,703	18,672	3,220,514	16,593
1961	2,525,397	21,689	4,361,135	4,468
1962	2,915,237	30,965	5,123,207	12,489
1963	3,267,904	38,814	6,007,142	33,273

Source: C.A.B. *Handbook of Airline Statistics*, 1965 Ed., Part III Tables 83 and 85, Part IV Tables 83 and 85.

As to the availability of jet aircraft for foreign flag carriers from non-competitive sectors, it is not known whether or not the profitability of these non-competitive sectors would or would not inhibit the shifting of jet aircraft to the Atlantic. Also, it is not clear whether the individual non-

competitive sectors recorded by Simat were not merely intermediate portions of a longer flight, which could not be deleted if the longer flight was to be retained, or that these sectors were operated with jet aircraft suitable for transatlantic operations.

Finally, there is no evidence that scheduling considerations would have permitted the shifting of aircraft from their actual routes to the Atlantic. For example, elimination of a short non-competitive flight by Pan Am or some other carrier might not free enough jet hours for an additional transatlantic flight, and even if sufficient hours were available, there is no evidence that they would have been available at times which were commercially attractive for transatlantic operations.

The defendants' experts stated a further objection to the plaintiff's method of calculating changes in operating revenues in that the plaintiff's experts assume that the categories of passengers other than scheduled transatlantic passengers included in the International Division ("beyond the gateway" and charter service passengers) would increase in the same percentage as for IATA scheduled transatlantic passengers. Defendants' experts produced statistics designed to show that TWA's actual experience demonstrated that "beyond the gateway" International Division passenger revenues, as defined by them, increased during the years in question at only 52% of the rate of increase for transatlantic IATA passengers; that the percentage of "beyond the gateway" passengers, as defined by them, to the total TWA International Division passengers dropped from 40.4% in 1959 to 29.5% in 1963; and that in terms of absolute numbers such TWA "beyond the gateway" passengers remained relatively unchanged over this period except for a "spurt" in 1963, while its IATA transatlantic passengers increased almost fourfold.

The evidence was conflicting as to the proper basis for measuring the volume of "beyond the gateway" passengers (Tr. 8506; TWA Ex. 340).

The plaintiff's claim for the 1959-60 period, however, does not rest upon any increase in traffic from year to year. It assumes only that whatever traffic moved in the International Division area would have been proportionately redistributed in its favor, if it had the assumed increase in number and betterment in quality of equipment. Transatlantic passenger figures of the industry are used as a basis for computations because they are admittedly accurate and constitute the bulk of revenues for the International Division, whereas no one was able to produce satisfactory International Division territory figures for the industry for estimation purposes (Tr. 8498). As to overall charter service in the area served by the International Division, it seems reasonable to assume, as the plaintiff did, that it is obtained for the transatlantic service generally in proportion to capacity offered, assuming the same type of equipment is used.

The plaintiff points out, finally, that the defendants' experts assume that if TWA had failed to obtain a favorable customer response to a larger jet capacity offered to charter customers and to "beyond the gateway" customers, TWA nevertheless would have continued the same proportionate distribution of its International Division jet aircraft between transatlantic service and these other services as it did historically. They stated that any rational management, during this period of jet shortage, would have promptly redistributed its aircraft assigned to the International Division so as to take advantage of the demand on the more profitable segments. If the more profitable segments consisted of transatlantic service, then service would have been transferred by management from the "be-

yond the gateway" service and the charter service to scheduled transatlantic flights.

As to the 1961-63 period, competitive conditions changed materially from the 1959-60 period. Jets had become available in greater quantity and the industry load factor dropped. Economic conditions were less favorable for international travel during most of the period. Piston service on the transatlantic route ceased, and TWA's comparative shortage of jet equipment in 1961 caused it rapidly to lose its market position. The plaintiff has assumed that in this period the total number of seats offered by the industry in general transatlantic competition would have increased because Pan-Am could have received delivery from Boeing directly of six B-331s which it decided to buy in 1959. Accordingly the plaintiff has estimated that TWA would have obtained its historical share of passengers based on the increased industry capacity. The net increase in operating profits estimated by the plaintiff for these years (on the basis outlined above) is substantially lower than for the 1959-60 period. The figures are as follows:

	Gross Estimated Additional Revenue	Estimated Increased Costs	Net Estimated Additional Revenues
1961	\$21.4 million	\$19.6 million	\$1.8 million
1962	31.0 "	28.5 "	2.5 "
1963	5.6 "	5.9 "	(.3) "

For background purposes, it is noted at this point that during the 1961-63 period, Pan-Am's Atlantic Division historically made an operating profit of \$50.3 million; and TWA's historic operating profit for this period in its International Division was \$25.1 million.

The defendants make the same two points in respect of the 1961-63 period as discussed above to dispute the validity of the plaintiff's estimates—i.e.—“competitive response”

and disproportionate increase assumed for "beyond the gateway" and charter service. In reply the plaintiff makes several additional points in respect of the years 1961-63: (a) It is unrealistic and speculative to assume TWA's foreign competitors would have weakened their competitive position on other routes to meet such increased transatlantic competition as would have been produced by Pan-Am's assumed acquisition of six additional jets early in 1961. Pan-Am would have had during this period, under the posited assumptions, exactly the same number of jets that it historically had, and presumably would have distributed them worldwide as it historically did. (b) It is reasonable to assume that an increase in jet service by TWA with resultant increase in its proportion of total service offered by the industry, would have correspondingly increased its proportion of total traffic carried in its International Division.

The reasoning of the plaintiff appears to me to be valid and accordingly I accept the added revenue estimates in respect of the six diverted B-331s as computed by the plaintiff's experts for the International Division.

Estimates of Operating Costs

The added costs of operating the six additional jets in the International Division were computed in detail by the experts for the plaintiff and defendants. (See summary thereof in table on p. 83.)

A brief description of the methodology used by the plaintiff's expert in estimating changes in operating expenses attendant upon the assumed additional TWA operations in respect of the six diverted B-331s is set forth below. Changes in operating expenses are separately computed for the increases in jet operations and the decreases in piston operations. As to each category, hereafter described,

a determination was made of the extent to which it varied historically in the years in question as the scale of operations changed, and an estimate was made based on the assumption that further changes in the scale of operations would produce further changes in expenses on a proportionate basis. Following are the categories and the method used for each in computing the changes in expenses for the assumed changes in operations.

Flying operations and maintenance expense incurred for operating and maintaining aircraft were changed in proportion to the assumed changes in plane miles or number of aircraft available.

Aircraft servicing expenses which have to do generally with ground activities for aircraft were computed on the basis that the estimated net increase of plane miles operated would have been proportional to the increase in number of flights processed on the ground and accordingly plane miles were used as the index for calculation of changes in this class of expense.

Passenger service expense which has to do with passengers while in flight was computed insofar as cabin personnel is concerned in proportion to plane miles operated; and expenses for food supplies and liability insurance were varied in accordance with passenger revenues.

Traffic servicing expense which has to do with handling passenger and cargo traffic on the ground were varied in proportion to transportation revenues.

Service and administration expense which has to do with supervisory and administrative activities for servicing of aircraft and traffic was varied in accordance with changes in plane miles.

Promotion and sales expenses were varied in accordance with changes in transportation revenues.

General and administrative expense which has to do with corporation matters in certain activities such as financial, accounting, legal and general administration were varied in accordance with changes in transportation revenues.

Depreciation and amortization were computed by Price Waterhouse & Co. and certified by it as being appropriate under the assumed changes in equipment.

The detailed changes in operating expenses are set forth in the Coverdale Report, Volume I and summarized at pages 37 and 38 thereof by years.

The total increased costs found by the defendants' experts for this facet of the case were less than those found by the plaintiff's experts by reason of the fact that the defendants' experts had calculated costs on the basis of a smaller increase in traffic. The total added costs under this facet of the case found by the plaintiff's experts was \$60.8 million; the corresponding total found by the defendants' experts was \$51.9 million. If the estimates of the plaintiff's experts as to increased traffic and revenues for the International Division are accepted, and the cost estimates of the defendants' experts are recomputed on that basis but using their own costing methods, the recomputed cost estimates of the defendants' experts would be at least as low as those of the plaintiff's experts. Since the estimates of the plaintiff's experts are accepted by me as to traffic and revenues, their estimates as to operating cost should be accepted. Accordingly, at this point no detailed discussion of the different costing methodologies used by the experts for the International Division is called for.

Revenues and Operating Costs—Second Part of Claim

The second part of the plaintiff's claim as to the International Division, as stated above, is a claim for \$4.8 million damages caused by delays in delivery of the 18 Boeing B-331 jets (insofar as a fraction thereof is assumed to be used in the International Division service) which resulted from orders therefor being delayed by Toolco until after the earliest delivery positions had been preempted by Pan-Am. The assumed earlier delivery dates would have affected operations only in 1959 and 1960 since the last of the B-331s was historically delivered in 1960.

There is agreement between the experts that the annual average added B-331 aircraft for the International Division under assumption of the earlier deliveries of the twelve B-331 jets for 1959 would be .9 aircraft and for 1960 would be .6 aircraft; that the added jet aircraft miles would be 1.6 million miles for 1959 and 1.1 million miles for 1960; that there would be a reduction of 1.6 million piston aircraft plane miles in 1959 leaving the International Division total plane miles unchanged; that there would be no reduction of piston plane miles in 1960 and accordingly the net increased plane miles for the International Division in 1960 would have been the same as the gross increase, i.e., 1.1 million plane miles; that the additional transatlantic seats for 1959 would have been only from the difference in size between the jets and the replaced pistons and would have amounted to 17 thousand additional transatlantic seats; and finally that the additional transatlantic seats for 1960 would be 27 thousand. Translating these figures into increased revenue, on the same basis as was used in the case of the six additional (Pan-Am) planes,

and adding thereto the 5% for additional revenues from cargo, the plaintiff's experts estimate that the total additional International Division operating revenues from assumed earlier delivery of twelve B-331s would have been \$4.5 million in 1959 and \$6.4 million in 1960. The defendants' experts would reduce these figures, as in the case of the six additional (Pan-Am) planes for the factors of (a) competitive response and (b) failure of "beyond the gateway" and charter traffic to increase proportionately to the increase in transatlantic service. The defendants' experts' figures, with these reductions, show assumed additional operating revenues of only \$2.79 million in 1959 and \$2.03 million in 1960. For the reasons above stated, the plaintiff's estimates of additional revenues are accepted.

As to operating costs, here again if the plaintiff's estimates on increased traffic and revenues are accepted, and the defendants' cost figures are recomputed under its own methods of costing but on the basis of the plaintiff's increased traffic and revenue figures, the result would be a total of operating costs at least as low as the plaintiff's cost figures. The plaintiff's operating cost estimates are accordingly accepted.

A recapitulation of the damages awarded in respect of the International Division is set forth at the end of Section I of this discussion of plaintiff's damage claims.

(B) Domestic Division

The next division of plaintiff's claims for damages with respect to inadequacy of its jet fleet is for loss of operating profits in its Domestic Division. Here because of the greater variety of aircraft types compared to the International Division, the opportunity for changing segment

(stage) lengths of flights, the more complicated fare structure, and the difficulty of computing applicable load factors, the estimation of changes in operating results is more difficult.

As a beginning to a review of this aspect of the case, it will be instructive to examine the following table showing the historical jet competitive picture between the plaintiff and its chief domestic competitors, the quantitative extent to which TWA historically lagged behind its chief domestic competitors in acquiring jets in the years 1959-63, and comparative operating profits:

Domestic Operating Profit (Loss)

vs.

Percent of 1964 Jet Fleet¹

	American			United ²			T.W.A.		
	Operating Profit (000)	No. of Jets	% of 1964 Fleet	Operating Profit (000)	No. of Jets	% of 1964 Fleet	Operating Profit (Loss) (000)	No. of Jets	% of 1964 Fleet
1959	\$24,517	24	30.0%	\$18,802	15	13.4%	\$ 26,308	18	22.7%
1960	24,720	34	42.5	9,429	44	39.3	(883)	21	25.3
1961	19,089	49	61.3	3,100	76	67.9	(10,226) ³	42	50.6
1962	19,335	63	78.8	14,845	87	77.7	(7,391)	56	67.5
1963	39,004 ²	64	80.0	26,635	91	81.3	17,552	61	73.5
1964	61,245	80	100.0	49,865	112	100.0	50,892	83	100.0

Sources: TWA Exhibit 46A and CAB Air Carrier Financial Statistics.

¹ Domestic year end inventories as a percent of 1964 year end inventories

² Excludes special adjustments. If these are included, the tendencies are more accentuated. Thus, for American in 1963 inclusion of the adjustment results in operating profit of \$43,900,000 and in 1961 for TWA results in operating losses of \$24,200,000.

³ Excludes Capital 1959-1960. If Capital is included, the United operating profit is \$19,100,000 in 1959, and \$3,100,000 in 1960. United's 1961 and (to some extent) 1962 operating results were affected by its acquisition on June 1, 1961 of Capital Airlines which had already incurred operating losses in 1961 of \$3,400,000.

The subdivisions of the plaintiff's Domestic Division claims are:

(a) failure to receive certain B-331s which were diverted by action of Toolco to Pan-Am and delay in delivery of other B-331s; and delay in delivery of fifteen B-131s;

(b) delay in delivery of twenty Convair 880s;

(c) failure to receive an additional ten Convair 880s of which six were diverted by action of Toolco to Northeast Airlines.

It will also be useful I believe, from time to time, while reading the ensuing discussion relating to the Domestic Division, to refer to the tables which follow comparing the amounts of the estimates of the plaintiff's experts and the final (or Supplemental) Estimates of the defendants' experts relating to the Domestic Division. The first table is plaintiff's Exhibit 420, Schedule B, showing the comparisons of the two sets of experts for each of the years 1959-63, as well as the comparisons of the totals for five years.

The second table is Schedule B1 of plaintiff's Exhibit 420. It sets forth the plaintiff's (Coverdale) estimates of each of said years by categories. Category II-1 relates to chapter II of the Coverdale Report dealing with the six additional B-331s. Category III-1 relates to chapter III of the Coverdale Report dealing with earlier receipt of B-131 and B-331 aircraft. Category IV relates to chapter IV of the Coverdale Report dealing with the delay in receipt of twenty CV-880 aircraft. Category V relates to chapter V of the Coverdale Report dealing with the failure to receive ten CV-880 aircraft.

The third table is Schedule B2 of plaintiff's Exhibit 420. It sets forth the final (or Supplemental) estimates of the

defendants' expert (Simat) for each of the five years—1959-1963. Simat, in its Supplemental Report referred to hereinafter, did not break down its estimates by categories (although it did so in its Original Report referred to hereinafter). The Final (or Supplemental) Simat Report gives, as will be noted, separate estimates for added jet revenues and costs, and for revenues and costs of deleted pistons, in lieu of breaking down the figures by the above mentioned categories.

(Tables reproduced on following pages.)

rs—
d to
ories
here—
ives,
nues
tons,
men—

T R A N S W O R L D A I R L I N E S, I

COMPARISON OF CHANGE IN DOMESTIC OPERATING PROFITS IN REPORT OF COVERDALE & COLPITTS (RE) AND SUPPLEMENTAL REPORT OF SIMAT, HELLIESEN & EICHNER, INC.

(Amounts in millions)

	1 9 5 9			1 9 6 0			1 9 6 1			1 9 6 2		
	C&C	SHE	*	C&C	SHE	*	C&C	SHE	*	C&C	SHE	*
Transportation revenues:												
Passenger revenues	\$5.90	(\$1.21)	\$7.11	\$39.50	(\$40.42)	\$79.92	\$38.20	(\$55.22)	\$93.42	\$23.50	(\$.19)	\$23.31
Other	.40	(.06)	.46	2.00	(2.02)	4.02	1.90	(2.77)	4.67	1.20	(.01)	1.19
Rounding											.02	
Total transportation revenues	6.30	(1.27)	7.57	41.50	(42.44)	83.94	40.10	(57.99)	98.09	24.70	(.18)	24.52
Operating expenses:												
Flying operations		)		4.50	)		4.50	)		4.30)	
Direct maintenance	.20	.27	(.27)	3.70	(7.51)	15.21	4.40	(7.77)	15.87	3.10	7.64	
Applied maintenance burden	(.20)	)		(.50)	)		(.80)	)		1.10)	
Insurance	.30	1.60	(.10)	1.20	10.80	-	1.00	10.90	-	.60	6.70	
Depreciation - jet aircraft	1.20			9.60			9.90			6.10		
Rounding												
	1.50	1.87	(.37)	18.50	3.29	15.21	19.00	3.13	15.87	15.20	14.34	
Aircraft servicing	.10	.45	(.35)	1.40	(1.08)	2.48	1.60	(3.44)	5.04	1.40	.39	
Stewardess and related costs	.20	.05	.22	2.90	(.29)	5.84	2.80	(.40)	6.88	1.80	.34	
Other passenger servicing	.30	(.07)	.49	2.40	(2.65)	7.00	2.30	(3.68)	9.35	1.60	(.01)	
Traffic servicing		(.19)	.49		(4.60)			(7.05)			(.63)	
Servicing administration		.01	(.01)	.20	(.28)	.48	.20	(.59)	.79	.10	(.01)	
Reservation and sales	.50	(.12)	.62	3.40	(3.91)	7.31	3.10	(5.52)	8.62	2.00	(.02)	
Advertising and publicity	.10	(.03)	.13	.60	(.72)	1.32	.90	(1.15)	2.05	.70	-	
General and administrative	.10	.01	.09	.90	(1.03)	1.93	1.20	(1.78)	2.98	.70	.36	
Ground equipment maintenance and depreciation		.01	(.01)	.10	(.34)	.44		(.28)	.28		.56	
Rounding		.04	(.04)		.03	(.03)		(.02)	.02		.01	
	1.30	.16	1.14	11.90	(14.87)	26.77	12.10	(23.91)	36.01	8.30	.99	
Expenses covered in both reports	2.80	2.03	.77	30.40	(11.58)	41.98	31.10	(20.78)	51.88	23.50	15.33	
Depreciation - piston aircraft		(.19)	.19		(5.58)	5.58		(4.36)	4.36		(.51)	
Amortization				.30		.30	.20		.20	.10		
Total operating expenses	2.80	1.84	.96	30.70	(17.16)	47.86	31.30	(25.14)	56.44	23.60	14.82	
Change in operating profits	\$3.50	(\$3.11)	\$6.61	\$10.80	(\$25.28)	\$36.08	\$8.80	(\$32.85)	\$41.65	\$1.10	(\$15.00)	\$13.70

*C&C over (under) SHE.

Source:

C&C - Schedule B-1

SHE - Schedule B-2

OVERSIZE PAGE
SEE NEXT FRAME
FOR REMAINDER OF PAGE

SCHEDULE B

DOMESTIC
C&C AND SHE

T R A N S W O R L D A I R L I N E S, I N C.

COMPARISON OF CHANGE IN DOMESTIC OPERATING PROFITS IN REPORT OF COVERDALE & COLPITTS (REVISED)
AND SUPPLEMENTAL REPORT OF SIMAT, HELLIESEN & EICHNER, INC.

(Amounts in millions)

5 9		1 9 6 0			1 9 6 1			1 9 6 2			1 9 6 3			T o t a l		
SHE	*	C&C	SHE	*	C&C	SHE	*	C&C	SHE	*	C&C	SHE	*	C&C	SHE	*
21)	\$7.11	\$39.50	(\$40.42)	\$79.92	\$38.20	(\$55.22)	\$93.42	\$23.50	(\$.19)	\$23.69	\$20.10	\$ 1.87	\$18.23	\$127.20	(\$95.17)	\$222.37
06)	.46	2.00	(2.02)	4.02	1.90	(2.77)	4.67	1.20	(.01)	1.21	1.00	.09	.91	6.50	(4.77)	11.27
									.02	(.02)					.02	(.02)
27)	7.57	41.50	(42.44)	83.94	40.10	(57.99)	98.09	24.70	(.18)	24.88	21.10	1.96	19.14	133.70	(99.92)	233.62
)		4.50	)		4.50	)		4.30	)		3.10	)		16.40)	
27)	(.27)	3.70	(7.51)	15.21	4.40	(7.77)	15.87	3.10	7.64	.86	.40	7.01	(3.71)	11.80	(.36)	27.96
)		(.50)	)		(.80)	)		1.10	)		(.20)	)		(.60))	
60)	(.10)	1.20	10.80)	-	1.00	10.90)	-	.60	6.70)	-	.40	5.00)	.30	3.50	35.00)	.20
)		9.60	)		9.90	)		6.10	)		4.90	)		31.70)	
87)	(.37)	18.50	3.29	15.21	19.00	3.13	15.87	15.20	14.34	.86	8.60	12.01	(2.41)	62.80	34.64	28.16
45)	(.35)	1.40	(1.08)	2.48	1.60	(3.44)	5.04	1.40	.39	1.01	1.20	.12	1.08	5.70	(3.56)	9.26
05)			(.29)			(.40)			.34			.55)			.25)	
07)	.22	2.90	(2.65)	5.84	2.80	(3.68)	6.88	1.80	(.01)	1.47	1.60	.08)	.97	9.30	(6.33)	15.38
19)	.49	2.40	(4.60)	7.00	2.30	(7.05)	9.35	1.60	(.63)	2.23	1.40	(.32)	1.72	8.00	(12.79)	20.79
01)	(.01)	.20	(.28)	.48	.20	(.59)	.79	.10	(.01)	.11	.10	(.01)	.11	.60	(.88)	1.48
12)	.62	3.40	(3.91)	7.31	3.10	(5.52)	8.62	2.00	(.02)	2.02	1.80	.13	1.67	10.80	(9.44)	20.24
03)	.13	.60	(.72)	1.32	.90	(1.15)	2.05	.70	-	.70	.70	.06	.64	3.00	(1.84)	4.84
01)	.09	.90	(1.03)	1.93	1.20	(1.78)	2.98	.70	.36	.34	.50	.39	.11	3.40	(2.05)	5.45
01)	(.01)	.10	(.34)	.44		(.28)	.28		.56	(.56)		.28	(.28)	.10	.23	(.13)
04)	(.04)		.03	(.03)		(.02)	.02		.01	(.01)		.01	(.01)		.07	(.07)
16)	1.14	11.90	(14.87)	26.77	12.10	(23.91)	36.01	8.30	.99	7.31	7.30	1.29	6.01	40.90	(36.34)	77.24
03)	.77	30.40	(11.58)	41.98	31.10	(20.78)	51.88	23.50	15.33	8.17	15.90	13.30	2.60	103.70	(1.70)	105.40
19)	.19		(5.58)	5.58		(4.36)	4.36		(.51)	.51		(.26)	.26		(10.90)	10.90
		.30		.30	.20		.20	.10		.10	.10		.10	.70		.70
14)	.96	30.70	(17.16)	47.86	31.30	(25.14)	56.44	23.60	14.82	8.78	16.00	13.04	2.96	104.40	(12.60)	117.00
11)	\$6.61	\$10.80	(\$25.28)	\$36.08	\$ 8.80	(\$32.85)	\$41.65	\$ 1.10	(\$15.00)	\$16.10	\$ 5.10	(\$11.08)	\$16.18	\$ 29.30	(\$87.32)	\$116.62

T R A N S W O R L D A I R L I N E S , I N C .

CHANGE IN DOMESTIC OPERATING PROFITS IN REPORT OF
COVERDALE & COLPITTS (REVISED)

(Amounts in millions)

	<u>1 9 5 9</u>						<u>1 9 6 0</u>				<u>1 9 6 1</u>				<u>1 9 6 2</u>			
	<u>III-1</u>	<u>II-1</u>	<u>III-1</u>	<u>IV</u>	<u>V</u>	<u>Total</u>	<u>II-1</u>	<u>IV</u>	<u>V</u>	<u>Total</u>	<u>II-1</u>	<u>V</u>	<u>Total</u>	<u>II-1</u>	<u>V</u>	<u>Total</u>		
Transportation revenues:																		
Passenger revenues	\$5.90	\$1.90	\$1.10	\$23.60	\$12.90	\$39.50	\$1.40	\$12.20	\$24.60	\$38.20	\$2.00	\$21.50	\$23.50					
Other	.40	.10	.10	1.20	.60	2.00	.10	.60	1.20	1.90	.10	1.10	1.20					
Rounding																		
Total transportation revenues	6.30	2.00	1.20	24.80	13.50	41.50	1.50	12.80	25.80	40.10	2.10	22.60	24.70					
Operating expenses:																		
Flying operations		(.80)	(.40)	3.80	1.90	4.50	(1.00)	1.90	3.60	4.50	.60	3.70	4.30					
Direct maintenance	.20	(.70)	(.40)	3.20	1.60	3.70	(.60)	1.70	3.30	4.40	.10	3.00	3.10					
Applied maintenance burden	(.20)	(.60)	(.40)	.30	.20	(.50)	(.80)	(.10)	.10	(.80)	.20	.90	1.10					
Insurance	.30	.20	.10	.60	.30	1.20	.20	.30	.50	1.00	.10	.50	.60					
Depreciation - jet aircraft	1.20	.90	.60	5.40	2.70	9.60	1.60	2.60	5.70	9.90	.70	5.40	6.10					
Rounding																		
	1.50	(1.00)	(.50)	13.30	6.70	18.50	(.60)	6.40	13.20	19.00	1.70	13.50	15.20					
Aircraft servicing	.10	(.20)	(.10)	1.10	.60	1.40	(.20)	.60	1.20	1.60	.10	1.30	1.40					
Stewardess and related costs)	.20		.10	1.80	1.00	2.90		.90	1.90	2.80	.20	1.60	1.80					
Other passenger servicing)	.30	.10	.10	1.40	.80	2.40	.10	.70	1.50	2.30	.10	1.50	1.60					
Traffic servicing				.10	.10	.20		.10	.10	.20		.10	.10					
Servicing administration	.50	.20	.10	2.00	1.10	3.40	.10	1.00	2.00	3.10	.20	1.80	2.00					
Reservation and sales	.10			.40	.20	.60		.30	.60	.90	.10	.60	.70					
Advertising and publicity	.10			.60	.30	.90		.40	.80	1.20	.10	.60	.70					
General and administrative																		
Ground equipment maintenance and depreciation			.10			.10												
Rounding																		
	1.30	.10	.30	7.40	4.10	11.90	-	4.00	8.10	12.10	.80	7.50	8.30					
Expenses covered in both reports	2.80	(.90)	(.20)	20.70	10.80	30.40	(.60)	10.40	21.30	31.10	2.50	21.00	23.50					
Depreciation - piston aircraft																		
Amortization		.20	.10			.30	.20			.20	.10		.10					
Total operating expenses	2.80	(.70)	(.10)	20.70	10.80	30.70	(.40)	10.40	21.30	31.30	2.60	21.00	23.60					
Change in operating profits	\$3.50	\$2.70	\$1.30	\$ 4.10	\$ 2.70	\$10.80	\$1.90	\$ 2.40	\$ 4.50	\$ 8.80	(\$.50)	\$ 1.60	\$ 1.10					

Source. Comparison of change in operating profits in reports of
Coverdale & Colpitts and Simat, Helliesen & Eichner, Inc. (Revised),
TWA Exhibit 345A, pages as indicated above.

OVERSIZE PAGE
SEE NEXT FRAME
FOR REMAINDER OF PAGE

SCHEDULE M-1
DOMESTIC
C&C

T R A N S W O R L D A I R L I N E S, I N C.

CHANGE IN DOMESTIC OPERATING PROFITS IN REPORT OF
COVERDALE & COLPITTS (REVISED)

(Amounts in millions)

1 9 5 9	1 9 6 0					1 9 6 1				1 9 6 2			1 9 6 3		
III-1	II-1	III-1	IV	V	Total	II-1	IV	V	Total	II-1	V	Total	II-1	V	Total
\$5.90	\$1.90	\$1.10	\$23.60	\$12.90	\$39.50	\$1.40	\$12.20	\$24.60	\$38.20	\$2.00	\$21.50	\$23.50	\$1.90	\$18.20	\$20.10
.40	.10	.10	1.20	.60	2.00	.10	.60	1.20	1.90	.10	1.10	1.20	.10	.90	1.00
6.30	2.00	1.20	24.80	13.50	41.50	1.50	12.80	25.80	40.10	2.10	22.60	24.70	2.00	19.10	21.10
	(.80)	(.40)	3.80	1.90	4.50	(1.00)	1.90	3.60	4.50	.60	3.70	4.30	.40	2.70	3.10
.20	(.70)	(.40)	3.20	1.60	3.70	(.60)	1.70	3.30	4.40	.10	3.00	3.10	.10	.30	.40
(.20)	(.60)	(.40)	.30	.20	(.50)	(.80)	(.10)	.10	(.80)	.20	.90	1.10	.10	(.30)	(.20)
.30	.20	.10	.60	.30	1.20	.20	.30	.50	1.00	.10	.50	.60	.50	.40	.40
1.20	.90	.60	5.40	2.70	9.60	1.60	2.60	5.70	9.90	.70	5.40	6.10	.50	4.40	4.90
1.50	(1.00)	(.50)	13.30	6.70	18.50	(.60)	6.40	13.20	19.00	1.70	13.50	15.20	1.10	7.50	8.60
.10	(.20)	(.10)	1.10	.60	1.40	(.20)	.60	1.20	1.60	.10	1.30	1.40	.10	1.10	1.20
.20		.10	1.80	1.00	2.90		.90	1.90	2.80	.20	1.60	1.80	.20	1.40	1.60
.30	.10	.10	1.40	.80	2.40	.10	.70	1.50	2.30	.10	1.50	1.60	.10	1.30	1.40
.50	.20	.10	.10	.10	.20	.10	.10	.10	.20	.20	1.80	2.00	.20	1.60	1.80
.10			.40	.20	.60		.30	.60	.90	.10	.60	.70	.10	.60	.70
.10			.60	.30	.90		.40	.80	1.20	.10	.60	.70		.50	.50
		.10			.10										
1.30	.10	.30	7.40	4.10	11.90	-	4.00	8.10	12.10	.80	7.50	8.30	.70	6.60	7.30
2.80	(.90)	(.20)	20.70	10.80	30.40	(.60)	10.40	21.30	31.10	2.50	21.00	23.50	1.80	14.10	15.90
	.20	.10			.30	.20			.20	.10		.10	.10		.10
2.80	(.70)	(.10)	20.70	10.80	30.70	(.40)	10.40	21.30	31.30	2.60	21.00	23.60	1.90	14.10	16.00
\$3.50	\$2.70	\$1.30	\$4.10	\$2.70	\$10.80	\$1.90	\$2.40	\$4.50	\$8.80	(\$.50)	\$1.60	\$1.10	\$.10	\$5.00	\$5.10

Operating profits in reports of
Simat, Helliesen & Eichner, Inc. (Revised),
as indicated above.

SCHEDULE

DOMESTIC
SHE

TRANS WORLD AIRLINES, INC.

CHANGE IN DOMESTIC OPERATING PROFITS IN SUPPLEMENTAL REPORT OF
SIMAT, HELLIESEN & EICHNER, INC.

(Amounts in millions)

	1 9 5 9			1 9 6 0			1 9 6 1			1 9 6 2			1 9 6 3	
	AJ	Less DP	Total	AJ	Less DP	Total	AJ	Less DP	Total	AJ	Less DP	Total	AJ	Less DP
Transportation revenues:														
Passenger revenues	\$2.44	\$3.65	(\$1.21)	\$21.44	\$61.86	(\$40.42)	\$23.29	\$78.51	(\$55.22)	\$16.80	\$16.99	(\$.19)	\$12.02	\$10.15
Other	.12	.18	(.06)	1.07	3.09	(2.02)	1.16	3.93	(2.77)	.84	.85	(.01)	.60	.51
Rounding										.01	(.01)	.02		
Total transportation revenues	2.56	3.83	(1.27)	22.51	64.95	(42.44)	24.45	82.44	(57.99)	17.65	17.83	(.18)	12.62	10.66
Operating expenses:														
Flying operations	2.15	1.88	.27	31.14	38.65	(7.51)	32.15	39.92	(7.77)	21.94	14.30	7.64	13.28	6.27
Direct maintenance														
Applied maintenance burden														
Insurance	1.60		1.60	10.80		10.80	10.90		10.90	6.70		6.70	5.00	
Depreciation - jet aircraft														
Rounding	3.75	1.88	1.87	41.94	38.65	3.29	43.05	39.92	3.13	28.64	14.30	14.34	18.28	6.27
Aircraft servicing	.24	(.21)	.45	4.90	5.98	(1.08)	5.97	9.41	(3.44)	4.63	4.24	.39	2.41	2.29
Stewardess and related costs	.15	.10	.05	1.62	1.91	(.29)	1.67	2.07	(.40)	1.19	.85	.34	.91	.36
Other passenger servicing	.13	.20	(.07)	1.40	4.05	(2.65)	1.56	5.24	(3.68)	.98	.99	(.01)	.52	.44
Traffic servicing	.08	.27	(.19)	1.25	5.85	(4.60)	1.38	8.43	(7.05)	1.31	1.94	(.63)	.83	1.15
Servicing administration	.01		.01	.30	.58	(.28)	.42	1.01	(.59)	.31	.32	(.01)	.19	.20
Reservation and sales	.22	.34	(.12)	2.07	5.98	(3.91)	2.33	7.85	(5.52)	1.64	1.66	(.02)	.85	.72
Advertising and publicity	.04	.07	(.03)	.38	1.10	(.72)	.48	1.63	(1.15)	.43	.43		.36	.30
General and administrative	.12	.11	.01	2.11	3.14	(1.03)	2.77	4.55	(1.78)	1.53	1.17	.36	.98	.59
Ground equipment maintenance and depreciation	.08	.07	.01	1.30	1.64	(.34)	1.84	2.12	(.28)	1.44	.88	.56	.70	.42
Rounding	.02	(.02)	.04	.02	(.01)	.03	(.01)	.01	(.02)	.01		.01	.01	
Expenses covered in both reports	1.09	.93	.16	15.35	30.22	(14.87)	18.41	42.32	(23.91)	13.47	12.48	.99	7.76	6.47
Depreciation and insurance - piston aircraft (1)	4.84	2.81	2.03	57.29	68.87	(11.58)	61.46	82.24	(20.78)	42.11	26.78	15.33	26.04	12.74
Amortization														
Total operating expenses	4.84	3.00	1.84	57.29	74.45	(17.16)	61.46	86.60	(25.14)	42.11	27.29	14.84	26.04	13.00
Change in operating profits	(\$2.28)	(\$.83)	(\$3.11)	(\$34.78)	\$ 9.50	(\$25.28)	(\$37.01)	\$ 4.16	(\$32.85)	(\$24.46)	\$ 9.46	(\$15.00)	(\$13.42)	\$ 2.34

AJ = Added jet

DP = Deleted piston

(1) These amounts are shown together in the supplemental report.

Source Supplemental report of Simat, Helliesen & Eichner, Inc., Volume B, Part III, pages III - 25, 26 and 27.

OVERSIZE PAGE
SEE NEXT FRAME
FOR REMAINDER OF PAGE

COPY BOUND CLOSE IN CENTER

SCHEDULE B-2

DOMESTIC
SHE

TRANS WORLD AIRLINES, INC.

CHANGE IN DOMESTIC OPERATING PROFITS IN SUPPLEMENTAL REPORT OF
SIMAT, HELLIESEN & EICHNER, INC.

(Amounts in millions)

	1 9 5 9			1 9 6 0			1 9 6 1			1 9 6 2			1 9 6 3		
	AJ	Less DP	Total	AJ	Less DP	Total	AJ	Less DP	Total	AJ	Less DP	Total	AJ	Less DP	Total
Revenues:	\$2.44	\$3.65	(\$1.21)	\$21.44	\$61.86	(\$40.42)	\$23.29	\$78.51	(\$55.22)	\$16.80	\$16.99	(\$.19)	\$12.02	\$10.15	\$ 1.87
Fees	.12	.18	(.06)	1.07	3.09	(2.02)	1.16	3.93	(2.77)	.84	.85	(.01)	.60	.51	.09
Transportation revenues	2.56	3.83	(1.27)	22.51	64.95	(42.44)	24.45	82.44	(57.99)	17.65	17.83	(.18)	12.62	10.66	1.96
Less:															
Depreciation	2.15	1.88	.27	31.14	38.65	(7.51)	32.15	39.92	(7.77)	21.94	14.30	7.64	13.28	6.27	7.01
Finance burden	1.60		1.60	10.80		10.80	10.90		10.90	6.70		6.70	5.00		5.00
Jet aircraft	3.75	1.88	1.87	41.94	38.65	3.29	43.05	39.92	3.13	28.64	14.30	14.34	18.28	6.27	12.01
Operating	.24	(.21)	.45	4.90	5.98	(1.08)	5.97	9.41	(3.44)	4.63	4.24	.39	2.41	2.29	.12
Related costs	.15	.10	.05	1.62	1.91	(.29)	1.67	2.07	(.40)	1.19	.85	.34	.91	.36	.55
Servicing	.13	.20	(.07)	1.40	4.05	(2.65)	1.56	5.24	(3.68)	.98	.99	(.01)	.52	.44	.08
Insurance	.08	.27	(.19)	1.25	5.85	(4.60)	1.38	8.43	(7.05)	1.31	1.94	(.63)	.83	1.15	(.32)
Administration	.01		.01	.30	.58	(.28)	.42	1.01	(.59)	.31	.32	(.01)	.19	.20	(.01)
Sales	.22	.34	(.12)	2.07	5.98	(3.91)	2.33	7.85	(5.52)	1.64	1.66	(.02)	.85	.72	.13
Publicity	.04	.07	(.03)	.38	1.10	(.72)	.48	1.63	(1.15)	.43	.43		.36	.30	.06
Administrative	.12	.11	.01	2.11	3.14	(1.03)	2.77	4.55	(1.78)	1.53	1.17	.36	.98	.59	.39
Maintenance and	.08	.07	.01	1.30	1.64	(.34)	1.84	2.12	(.28)	1.44	.88	.56	.70	.42	.28
Other	.02	(.02)	.04	.02	(.01)	.03	(.01)	.01	(.02)	.01		.01	.01		.01
Revenues covered in both reports	1.09	.93	.16	15.35	30.22	(14.87)	18.41	42.32	(23.91)	13.47	12.48	.99	7.76	6.47	1.29
Less insurance -	4.84	2.81	2.03	57.29	68.87	(11.58)	61.46	82.24	(20.78)	42.11	26.78	15.33	26.04	12.74	13.30
Flight (1)		.19	(.19)		5.58	(5.58)		4.36	(4.36)		.51	(.51)		.26	(.26)
Operating expenses	4.84	3.00	1.84	57.29	74.45	(17.16)	61.46	86.60	(25.14)	42.11	27.29	14.82	26.04	13.00	13.04
Change in operating profits	(\$2.28)	(\$.83)	(\$3.11)	(\$34.78)	\$ 9.50	(\$25.28)	(\$37.01)	\$ 4.16	(\$32.85)	(\$24.46)	\$ 9.46	(\$15.00)	(\$13.42)	\$ 2.34	(\$11.08)

are shown together in the supplemental report.
 Supplemental report of Simat, Helliesen & Eichner, Inc., Volume B, Part III, pages 111 - 25, 26 and 27.

B331's and B131's—Plaintiffs' Position

(a) We will first discuss the plaintiff's revenue estimates (Coverdale) for the B-331s allocated to the Domestic Division. The facts with respect to failure to deliver and delay in delivery of the Boeing B-331s have been set forth above. We have also previously listed (p. 52) the reconstructed earlier receipt dates for the B-331s as computed by Rummel and have set forth the underlying assumptions by which they were fixed.

The Coverdale report computed the change in operating profits for the Domestic Division by a different methodology than used by it for the International Division claims in certain particulars. These are set forth in the discussion, which follows, to the extent the methodology is different. The annual average number of B-331s which would have been available for commercial service (after the above-described adjustment for the B-331Bs and for a non-controverted short-term lease of aircraft time to Northeast) was computed for the Domestic Division under the same method heretofore set forth. They were as follows (TWA Ex. 4(c)(1), pp. 13, 27, 42):

Planes Allocated from the 6 Diverted B-331s		Planes Allocated from Late Delivery of the 12 B-331s	
1959	— none	1959	— 0.6
1960	— 1.4	1960	— 0.7
1961	— 2.2		
1962	— 1.0		
1963	— 0.5		

These assumed additional jet aircraft would have produced (under the method heretofore described) additional

passenger revenue plane miles as follows (*id.*, pp. 28, 43, 44):

For the Diverted Planes			For the Late Deliveries		
1960	—	2.0 million miles	1959	—	0.8 million miles
1961	—	3.3 " "	1960	—	1.0 " "
1962	—	1.4 " "			
1963	—	0.7 " "			

Using actual seats per aircraft and actual TWA average load factors for B-331s in Domestic Division service for each year (except the B-131 load factor was used for B-331 computation for 1959 when no B-331s were in domestic service) the resulting passenger miles for the additional jet aircraft would have been as follows (*id.*, pp. 28, 43, 44):

For the Diverted Planes			For the Late Deliveries		
1960	—	156 million miles	1959	—	74 million miles
1961	—	206 " "	1960	—	78 " "
1962	—	76 " "			
1963	—	42 " "			

The reduction of piston passenger revenue plane miles, based upon the actual annual TWA experienced ratios in domestic service of all piston plane mile decrease to all jet plane mile increase, was as follows (*id.*, pp. 29, 43, 44):

For the Diverted Planes			For the Late Deliveries		
1960	—	2.9 million miles	1959	—	0.8 million miles
1961	—	4.2 " "	1960	—	1.4 " "
1962	—	0.9 " "			
1963	—	0.2 " "			

The reduced piston passenger miles were then computed by using the average number of seats based on the average for all TWA piston aircraft for the year and actual annual average load factors of TWA's piston aircraft used

in the Domestic Division during the years in question. The resulting figures were (*id.*, pp. 30, 44, 45 and by calculation):

For the Diverted Planes			For the Late Deliveries		
1960	—	123 million miles	1959	—	38.4 million miles
1961	—	182 " "	1960	—	59 " "
1962	—	44 " "			
1963	—	9 " "			

The net increase in passenger miles was then computed. Using TWA's annual average yield (Domestic Division actual passenger revenue, combined jet and piston, per passenger mile) the increase in Domestic Division revenues for the B-331 aircraft operations was estimated at (*id.*, pp. 30, 44, 45 and by calculation):

For the Diverted Planes		For the Late Deliveries	
1960	— \$1.9 million	1959	— \$1.9 million
1961	— \$1.4 "	1960	— \$1.1 "
1962	— \$2.0 "		
1963	— \$1.9 "		

The additional revenue for non-passenger traffic (mail, express, freight, excess baggage) was calculated at 5% of the estimated additional passenger revenue. The resulting total additional revenue estimate was:

For the Diverted Planes		For the Late Deliveries of B-331s	
1960	— \$2.0 million	1959	— \$2.0 million
1961	— \$1.5 "	1960	— \$1.2 "
1962	— \$2.1 "		
1963	— \$2.0 "		

The total of additional revenues thus claimed in respect of the B-331s under subdivision (a) is \$10.8 million.

Next we summarize the plaintiff's revenue estimates in respect of the late deliveries of B-131s.

Rummel prepared a table showing the effect on delivery positions by reason of the delays in delivery of the B-131s. His underlying assumptions in computing the reconstructed earlier receipt dates therefor were the same as those discussed above (pp. 48-56) in respect of the B-331 earlier delivery dates, and are accepted for the reasons stated above.

The list below shows the actual receipt dates for the B-131s and opposite each such date is the corresponding reconstructed earlier receipt date. (TWA Ex. 4(c)(1), p. 40.) Each plane, as in the case of the B-331s, was fully identified, and actual receipt date verified for the record, from official CAB records.

Actual Receipt	Reconstructed Earlier Receipt
1/29/59	11/30/58
3/17/59	12/31/58
3/30/59	1/31/59
4/ 3/59	2/27/59
4/18/59	3/30/59
4/29/59	4/ 3/59
5/10/59	4/18/59
5/13/59	5/10/59
5/24/59	5/13/59
5/28/59	5/24/59
6/13/59	5/28/59
7/ 1/59	6/13/59
7/10/59	6/29/59
7/14/59	7/10/59
8/ 1/59	7/27/59

On the basis of TWA's experience as to time between receipt dates and commencing service, Coverdale computed that revenue service for the B-131s would have commenced

January 6, 1959. Only the year 1959 is involved in the B-131 computations.

Coverdale, using the same methodology as described above for B-331s assigned to domestic service, computed the additional annual average number of B-131s available for 1959 in the Domestic Division at 1.4 aircraft. The additional jet plane miles were 1.9 million miles. The additional passenger miles were 176 million miles. The corresponding reduction of piston plane miles was 1.9 million miles. The deleted piston passenger miles (using the number of seats in the L-1649A times the actual load factor) were 89.6 million miles. The increased passenger revenue estimate resulting from these computations is \$4.1 million. To this figure 5% is added for non-passenger revenues. The plaintiff therefore estimates additional revenue from the assumed earlier delivery of the B-131s for the Domestic Division of \$4.3 million.

The total estimated increased revenues under subdivision (a) of the Domestic Division claim is thus \$15.1 million. We note in passing that Coverdale estimated combined increased expenses for subdivision (a) at \$6.1 million leaving estimated additional net operating revenue of \$9.0 million as the amount of plaintiff's damage claim for subdivision (a) of the Domestic Division claims. Discussion of costs will, however, be deferred until later.

B331's and B131's—Defendants' Position

We will next review the revenue computations of the Simat Report for subdivision (a). The Simat estimates use a different method of computation of the average stage length over which the added flights would be operated, a different method of computing load factors and a different method of computing passenger yields. Coverdale

assumed that the added jet services would be operated at the same average stage lengths as existing domestic jet services for planes of the same or similar types in the year that the added services would be operated; that added jet aircraft and displaced piston aircraft would be operated at the same average load factor (per cent of available seats which are occupied) as all flights operated in that year by TWA with aircraft of the same or similar types; and that added jet services and displaced piston services would yield revenues per passenger mile equal to the average yield experienced by TWA per passenger for the year in which added for the same or similar type plane.

The basic differences between the two reports, according to the Simat, arise from certain erroneous assumptions from the Coverdale report. Simat testified that jet aircraft, as they were received by the various carriers including TWA, were assigned to the most lucrative long-haul routes, where their attractiveness to passengers and operating economies could be most fully exploited. As additional jets would be received, they would be added to the best of the remaining routes, which were less advantageous than the original assignments, and according to Simat, the history of jet deliveries showed a pattern of assignment to routes of decreasing advantage. Simat asserted that the Coverdale study failed to take this pattern into consideration, and that as a result, the Coverdale report contained certain "fundamental errors" as follows (*italics mine*):

(1) The assumption that added jet aircraft and displaced piston aircraft would be operated at the same average *load factors* as the average of all aircraft of the same or similar types for the year is unrealistic. Added jet operations, Simat estimated, in fact would produce addi-

tional traffic at levels well below the average for existing jets, and displaced piston aircraft would be drawn from the most effective of the piston aircraft services, rather than services of average effectiveness.

(2) The assumption that added jet aircraft of a particular type would be used in *stage lengths* exactly as the average of all aircraft of the same or similar types for the year is not realistic because the added aircraft are not used as productively or as economically as available aircraft of the same or similar types. Additional aircraft would be operated at stage lengths shorter than average. By the same token displaced piston services were not average piston aircraft services but were long-haul services affording better-than-average use of piston aircraft with respect to productivity and operating economies.

(3) The assumption that passenger traffic added by added jet services or deleted by displaced piston services would have *revenue yields per passenger mile* equal to the average experienced yield per passenger mile for the year in which added, is unrealistic. Simat estimated that the yields from this added jet passenger traffic would be below average revenue yields per passenger mile and yields of traffic from displaced piston services would not necessarily be at the average revenue yield for the Domestic Division.

We will defer until later discussion of a Supplemental Simat Report, and now discuss the three factors which, in the original Simat Report, differentiate it from the Coverdale Report as to the Domestic Division.

The original Simat Report states his opinion that the assumed additional jet operations would not have produced additional net revenues for the plaintiff in the 1959-63 period. In support of this conclusion, Simat makes the following points:

1. The economic climate for increased airline capacity was not favorable during the years in question. In June 1960 the economy started a downward drift which continued through February, 1961. This was followed by a gradual recovery through the third quarter of 1962 and finally through the balance of 1962 and in 1963 by a period of accelerated growth.

2. While volume of domestic air travel has shown a long term trend of generally more rapid rate of growth than the economy as a whole, it mirrors the forces of decline and growth in the economy.

3. Actual load factors for the industry declined precipitously in 1959 through 1962, leveling out only in 1963. TWA's load factor in all its scheduled services declined from 71% in 1959 to 53% in 1963.

4. The U. S. air trunkline industry suffered a decline in earnings shown by the CAB Handbook of Airline Statistics, 1965 edition, as follows:

	Operating Profit	Adjusted Net Income
1959	\$124 million	\$71 million
1960	\$ 80 "	\$16 "
1961	\$ 13 "	(\$36) "
1962	\$158 "	\$40 "
1963	\$259 "	\$77 "

5. From the same source, it was shown that from the beginning of 1959 to the end of 1961 approximately one billion dollars were added to the investment of U.S. domestic and international trunk line carriers in additional flight equipment, ground property and equipment and net working capital. For each dollar added there was a loss of 9 cents in operating profit.

6. The rate of return before investment tax credit—a measure employed by the CAB to gauge the appropriateness of airline earnings for regulatory purposes—reached a low of 4% for U.S. certificated route air carriers from 1959 through 1963. This was the lowest average rate of return for the industry for any five consecutive post-war years. It compares with an average rate of return of 7% for the preceding 1955-58 period and a rate of return of 11% for the 1964-68 period.

Simat next presented a mathematical study based upon computer calculations to support his conclusions. He expressed his opinion that *marginal load factor*, i.e., the ratio of the net passengers added by an additional flight to the seat capacity added by the flight, rather than annual average load factor for the type of plane for the year involved, should be the factor used in considering whether the addition of an assumed flight would be profitable in calculating damage estimates. He states that the marginal load factor for added flights is generally less than the actual load factor of existing flights because added flights compete to some extent with existing flights of the same carrier and divert traffic from other existing flights.

Simat then made an adjustment in his marginal load factor percentages, before applying it to his damage estimates, to compensate for traffic produced solely by "forces in the economy." The adjustment was intended to result in isolating the additional traffic that he estimated would have been due solely to the introduction of additional jets. This adjustment was in proportion to the increase in Disposable Personal Income, which is an index used by the Office of Business Economics of the U.S. Department of Commerce and which, in Simat's opinion, would have reflected the ability of people to engage in air travel for personal reasons.

The adjusted marginal load factors, by years, were applied by Simat to the agreed upon added plane miles for estimating added and deleted passenger miles. The average marginal load factors for the combined experience of all types of jets were used by Simat to obtain the marginal load factor for jet operations since, he stated, his studies showed a high degree of interrelation among the various categories of jets. The same method was used for non-jets to obtain the average marginal load factor for non-jets.

Simat found, as a result, that the Coverdale estimates of increase in passenger traffic from the addition of domestic jet services were "overstated" by 1.65 billion passenger miles, equal to 41.9% of the total estimate of added jet traffic. He also found that Coverdale "understated" the estimates of deleted piston aircraft traffic by 1.1115 billion passenger miles, equal to 63.3% of the total estimate. We reserve until later our opinion of the validity of the use of average load factor (Coverdale) or adjusted marginal load factor (Simat) in computation of damages.

The procedure followed by Simat to obtain domestic passenger revenue yields was to apply to his estimates of added jet and deleted piston passenger miles in each year, not the historical average yield for all passengers (as did Coverdale) but the particular yield which was found by him to be applicable in that year to trips of the average length that would have been taken by passengers who would have been added and deleted. This required three steps: (1) estimation of average stage lengths for the assumed added and deleted traffic; (2) estimation of average passenger trip lengths for the assumed added and deleted traffic; and (3) estimation of the average yield which would have been realized by TWA for different passenger trip lengths.

Simat reviewed TWA's domestic jet schedules and derived mathematical relationships between existing stage lengths of jet flights and the stage lengths of jet flights actually added in the years in question. Based upon these relationships, he estimated the stage lengths of the flights that would have been added with the assumed additional jet aircraft.

His relationships for estimating the stage lengths of added scheduled jet services for each type of jet aircraft are expressed in the formula (DX 271A, p. IV-3):

$$\text{Average Stage Length of Added Jet Services (Miles)} = C1 \times \frac{\text{Average Stage Length of Existing Jet Services (Miles)}}{C2}$$

Where C1 is an amount less than 1.0 applied to determine that part of the stage length of added jet services that varies in proportion to the actual length of existing jet services and

C2 is an additional number of miles that does not vary with the stage length of existing jet services.

For the B-331 aircraft, the specific relationship was:

$$\text{Average Stage of Added Flights (Miles)} = 0.271 \times \frac{\text{Average Stage of Existing Flights (Miles)}}{631.544}$$

Adjustment was made for non-scheduled flights by assuming they would have had the same lengths as scheduled flights and would be flown in the same relative proportions as the miles actually flown in all service in the same years.

The above formula for the B-331s was determined by a method commonly recognized by statistical experts for determining relationships between two variables, and known as regression analysis or as the method of least squares (Tr. 7805-6). As an example, by plotting on graph paper aircraft hours operated (independent variable) and

amount of operating expenses (dependent variable) for several airlines, one can connect the dots on the graph with a straight line which represents an average relationship between the points. There are various standards for placing the straight lines, but the method of least squares fits the line to the various observations (dots) so as to reduce the squares of the deviations (differences) to a minimum. It produces a line showing the average of the various lines that might be fitted to the observations. If one squares the deviations and divides by the number of observations, one gets the standard error of estimate; and, given a normal distribution of errors, 68% of the observations should fall within one standard of error and 95% of the observations should fall within two standard errors. Relationships based on fewer observations tend to be more untrustworthy, and results showing a large proportion of observations outside the standard error of estimate likewise tend to be untrustworthy unless validated by independent means.

No claim was made by Simat that regression analysis was anything more than a statistical method useful in testing the validity of assumptions made by non-mathematical observations and raw data and conclusions based thereupon. Nevertheless Simat was of the opinion that the statistics produced by regression analysis under the assumptions made in his report confirmed his expert opinion as to the financial results that would have been obtained under the relevant equipment assumptions.

The average stage length estimated by Simat for the added B-331 domestic flights are set forth below, and are compared with the stage lengths used by Coverdale, which were based on the average stage lengths which TWA actually experienced with B-331 jets for that year (DX 271B, Ex. A-D):

	Coverdale	Simat
1959	1869 miles	1047 miles
1960	1869 "	1047 "
1961	1389 "	1009 "
1962	920 "	881 "
1963	799 "	848 "

The number of flights that would be performed with the added aircraft miles was obtained by dividing the added plane miles by Simat's estimated average stage length of the added services:

	Net Added B-331 Flights
1960	1600
1961	3122
1962	1613
1963	855

In obtaining his trip length data for added and deleted traffic, Simat noted that TWA's average passenger trip length historically trended steadily upward during 1959-1963—from 892.6 miles per passenger to 942.3 miles per passenger. TWA would have added 499,000 passengers and 725 million passenger miles during this period, giving an average trip length per added passenger of 1,453 miles. This is 1.6 times the 914 mile average stage length of TWA's domestic traffic in this period. Simat then derived a relationship between the stage lengths of added and deleted flights and the trip lengths of passengers added and deleted as a consequence of the flight changes. Separate ratios were established for jet and piston services, using various assumptions that Simat considered reasonable on the basis of his experience. Using these ratios, he estimates the average trip length of added jet passengers by increasing the estimated stage lengths of the added flight

by 144% and of deleted piston passengers by applying 168% to the stage lengths of the deleted piston flights.

He stated that the reason why revenue passenger yield realized by domestic air carriers varies with distance traveled is because the fares contain a fixed component in the form of a charge per ticket, which is intended to cover such costs as ticketing and handling of the passenger and baggage at airports (not dependent on length of trip) and a variable component in the form of a charge per mile. As the length of trip increases, there results a "fare taper." Adding to the effect of taper are such factors as that passengers on longer than average trips get a disproportionate part of fare discounts. By use of regression analysis Simat obtained a relationship between yields and trip distances on an industry basis for the years 1959-63. These figures were adjusted to TWA yields by comparing the actual passenger yield for TWA at an average trip length in each year with the yield estimated for the same trip length using the industry relationship.

The estimated revenue yields were applied to the estimated adjusted marginal load factors, computed as above described, and transportation revenues were obtained.

We now show the results of the methodology in the original Simat Report under subdivision (a):

The seat miles for the added B-331 planes are the same as under Coverdale assumptions. The adjusted marginal load factors and added passenger miles are (DX 271B, p. IV-25):

	Added Seat Miles (Millions)	Marginal Load Factor	Added Revenue Passenger Miles
1960	241.6	32.4%	78.3 million
1961	418.1	22.7	94.9 "
1962	180.9	49.2	89.0 "
1963	97.7	49.5	48.4 "

The average stage lengths, passenger trip length, and added passengers are (*id.*, p. IV-27) :

	Average Added Stage Length (Miles)	Average Added Trip Length (Miles)	Added Passengers
1960	1,138	1,633	47,449
1961	1,009	1,447.9	65,543
1962	881	1,264.2	70,400
1963	848	1,216.9	39,773

Applying the yields for passenger revenues, computed as set forth above, the following estimated added revenues are obtained (*id.*, p. IV-29) :

	Passenger Revenue Yield Per Mile	Total Added Revenues
1960	5.342¢	\$4.39 million
1961	5.685¢	\$5.67 million
1962	5.979¢	\$5.59 million
1963	5.768¢	\$2.93 million

As to displaced piston aircraft service, Simat noted that Coverdale had based its estimate on the experienced ratio of total such miles deleted to total jet miles added in each year, and had assumed that all the additional plane miles deleted in domestic service were flown with L-1649As or L-1049Gs. Simat disagreed with this latter assumption, and stated that by eliminating the piston aircraft with the largest number of seats, Coverdale had overstated the number of piston seat miles to be eliminated. Simat accordingly computed the additional piston miles deleted according to the type of piston plane proportional to the plane miles of each type actually deleted in the year in question. The results, applying marginal load factors, gave the estimated deleted passenger miles as follows (*id.*, p. IV-31):

	Deleted Available Seat Miles (Millions)	Marginal Load Factor	Deleted Passenger Miles (Millions)
M-404— 1960	22.	63.2	13.90
1961	38.	57.3	21.77
L-049/749			
1960	52.88	63.8	33.74
1961	63.39	58.	36.75
1962	50.78	72.6	36.87
1963	5.51	69.4	3.82
L-1049 1960	33.51	64.4	21.58
L-1049G 1960	61.16	63.1	38.59
1961	43.66	57.1	53.15
1962	1.60	72.7	1.16
1963	2.39	69.4	1.66
L-1049H 1960	.97	66.	.64
L-1649A 1960	10.09	63.5	6.41
1961	80.24	63.4	50.87
1963	9.10	84.8	7.72

The average stage lengths and average trip length of deleted passenger traffic having next been obtained, the numbers of deleted passengers were computed. The revenue yields were computed for each type of deleted piston and the resulting deleted revenues, were as follows (*id.*, p. IV-35):

	Deleted Revenues (Millions)
M-404 1960	\$1.02
1961	\$1.67
L-049/749 1960	\$2.08
1961	\$2.42
1962	\$2.64
1963	\$.26
L-1049 1960	\$1.30
L-1049G 1960	\$2.23
1961	\$3.39

		Deleted Revenue (Millions)
L-1049G (cont.)		
	1962	\$.07
	1963	\$.11
L-1049H	1960	\$.03
L-1649A	1960	\$.37
	1961	\$3.21
	1963	\$.47

The methods used in the original Simat Report for estimating changes in operations from the earlier delivery of certain B-131 and B-331 aircraft follow the procedures described above in respect of the changes from failure to receive certain B-331s, and the detailed figures appear in DX271A, Chapter V.

The original Simat estimate for subdivision (a) is that the total revenues would have been strikingly less than the Coverdale estimate if the Boeing jets had been introduced and operated under the posited equipment assumptions.

Discussion of costs relating to this subdivision (a) and my decision as between the methodologies of the plaintiff and defendants are deferred until later.

Twenty Convair 880's—Plaintiff's Position

Subdivision (b) of the plaintiff's claim for loss of profits in the Domestic Division is based upon the delayed delivery of twenty of the thirty CV-880 aircraft originally ordered by Toolco from Convair. On this subject paragraph 19 of the complaint states:

"During the period 1956 to 1960, the defendants required Convair to make certain changes in the design of Model 880 aircraft on order by Toolco, but the defendants prevented TWA from arranging with Convair for certain design modifications which were de-

sired by TWA and which would not have interfered with the scheduled dates of delivery. During the year 1960 the defendants also prevented and restricted TWA from making acceptance and test flights from time to time of various specific Convair model 880 aircraft then on order with Convair by Toolco."

Paragraph 18 of the complaint provides, in part, with respect to the Convair 880's:

"Despite repeated requests by TWA Toolco refused throughout the period 1956 to 1960 to assign to TWA the rights to acquire such aircraft."

The background facts are that Toolco, in April 1956, contracted with Convair for thirty medium range CV-880 jets, a newly developed model. At or about the same time Delta contracted with Convair for ten of the CV-880 jets. These contracts provided for a subsequent allocation of delivery dates for the 40 planes between Toolco and Delta, which was to be worked out between the parties at a later date. The selection of CV-880 jets by Toolco for medium range operations was on Rummel's recommendation. He favored concentrating on pure jets in preference to buying turbo-prop aircraft for medium range operations. The number ordered by Toolco—i.e.—thirty aircraft, was also based upon Rummel's recommendation.

The plaintiff does not contend that a medium range jet could or should have been ordered at an earlier date. After a succession of modifications in the original Toolco and Delta contracts, Convair agreed in the final contract to the first delivery to be made in November 1959 and the fortieth in September 1960, with the allocation of specific dates still to be made by mutual agreement.

In the fall of 1958 when the production of the CV-880s had reached a point where it became essential to allocate particular aircraft between Toolco and Delta, so that the configurations would meet the respective requirements of the two airlines, Toolco refused to agree to any proposed allocation of delivery dates and Convair finally made a specific allocation on its own initiative (Rummel, TWA Ex. 2, p. 15; Tr. 1094-1095, 1108, 1552-1553). Delta executed a contract amendment incorporating the delivery schedule provided for it (TWA Ex. R10). Toolco never executed such an agreement, but the evidence shows that Toolco could have contracted for the contract delivery dates assigned to it by Convair. The plaintiff has accordingly assumed delivery dates so assigned by Convair (original contract delivery dates) in measuring the delays in delivery of twenty of the CV-880's.

Rummel testified (Tr. 307, 321, 444, 1538) that defendant Hughes assumed personal control of all matters connected with Convair deliveries; that no one else in TWA was permitted to become involved on matters of delivery; that in the fall of 1959 defendant Hughes instructed him that he was not to proceed with any acceptance procedures or even to continue acceptance flights without receiving personal clearance from defendant Hughes (Tr. 2949-50, 2987). The evidence as a whole bears out this Rummel testimony.

Rummel also testified that in December 1959 Toolco sent armed guards to the Convair plant who actually took control over the first four CV-880's coming off the production line and scheduled for delivery to TWA or Toolco; that these planes were subsequently bailed to Toolco and remained in that condition for many months, unavailable for final inspection test flight or acceptance procedures (Tr.

2788-90, 2810-17, 2839-40). The effect of this incident is discussed later.

Rummel also testified that removal of other CV-880's from the production line came as a direct result of the actions of defendant Hughes (Tr. 2836-37). Rummel also testified that when Convair subsequently tendered approximately seven or eight completed aircraft, they were refused because "we had not been cleared by Hughes to do so" (Tr. 2763-66).

Rummel also testified that Convair claimed damages from Toolco for delay in delivery and storage costs on nineteen of the twenty planes which eventually went to TWA and that in 1963 (when TWA purchased six additional CV-880s from Convair after repossession from Northeast Airlines) that Toolco agreed to credit Convair with a substantial sum in recognition of these claims (Tr. 2757-65; DX 145; TWA Ex. 21).

Delta during this period was accepting deliveries of aircraft under the contract with an average delay of 1.4 months per plane subsequent to the various contract delivery dates. Rummel testified that if TWA had been the purchaser, independent of defendants Hughes and Toolco, it was his opinion that Convair would have delivered the aircraft to TWA on a schedule at least closely approximating that of Delta (Tr. 1129-1139).

TWA's claim for damages under this facet of the case is based on the original Toolco-Convair contract delivery dates, as stated above. Its theory of damages is that by reason of the actions of Toolco, it is entitled to rely upon the schedule of deliveries which Convair was willing (prior to these events) to contract to meet.

Following is a table showing the original contract delivery dates, the actual receipt dates and the months difference (TWA Ex. 4(c)(1), p. 52):

Actual Receipt Date	Contract Delivery Date	Months Difference
5/18/60	11/59	6
1/ 1/61	1/60	12
1/ 5/61	2/60	11
1/ 6/61	3/60	10
1/ 8/61	3/60	10
1/12/61	4/60	9
1/21/61	4/60	9
2/ 2/61	5/60	9
2/15/61	5/60	9
3/15/61	6/60	9
3/18/61	6/60	9
3/20/61	7/60	8
4/26/61	7/60	9
5/ 6/61	7/60	10
5/25/61	7/60	10
6/ 9/61	8/60	10
7/ 9/61	8/60	11
8/10/61	8/60	12
9/ 2/61	9/60	12
10/13/61	9/60	13

The Coverdale Report computed the increase in annual average CV-880s which would have been available for commercial service if the original contract delivery dates had been met under this portion of the case, as follows (*id.*, p. 53):

1960—10.3 planes

1961— 5.2 planes

assuming the aircraft would have been received on the 15th of whatever month was specified in the contract for each aircraft.

Using TWA historical data for 1961 operation of CV-880s, Coverdale calculated the additional plane miles would have been 5.9 million for 1961; and again using 1961 data (since TWA was not operating CV-880s in 1960), it calculated the additional plane miles for 1960 as 11.6 million.

Using TWA's average of 88.3 seats offered for sale per CV-880 in 1961, it then calculated the additional seat miles as (*id.*, p. 54):

1960—1,024 million additional seat miles

1961— 521 million additional seat miles

Using TWA's 1961 average CV-880 passenger load factor, the resulting number of additional jet passenger miles for 1961 is 341 million miles. Since TWA did not have CV-880s to operate in commercial service in 1960, Coverdale took average load factor for 1960 for TWA's Boeing 331s and 131s used in the Domestic Division and thus computed additional jet passenger miles for 1960 for the CV-880s as 702 million miles. (*Id.*, p. 55.)

To obtain the corresponding reduction in piston plane passenger miles a complicated formula was used: An examination was made of the historical service patterns for the thirty specific pairs of cities in which TWA historically employed its twenty CV-880s when they were put into service in 1961 and for the six additional pairs of cities served by the six additional CV-880s when they were put into service in 1963. The historical decrease in piston service on those particular segments was totaled and was related to the amount of jet service introduced on such segments. It was found that the average decrease in piston plane miles was 52% of the increase in jet plane miles between the same cities. It was assumed that this percentage would be applicable to any earlier service and to any further increase in CV-880 service in similar operations; and

that in any given year the kinds of operations in which TWA would have used additional jets of a given type would have been essentially similar to the operations in which aircraft of the same type were used by TWA historically in the same year. Applying the 52% reduction factor to the additional CV-880 jet plane miles the additional reduction of piston plane miles becomes (*id.*, p. 62):

1961—3.1 million

1960—6.0 million

More than half of the reduction shown above was in flights of L-1049G aircraft, and the Coverdale Report used the average number of seats offered for sale in L-1049Gs for each of the two years in question, and the average load factor for such piston plane for each year, and thereby arrived at the following figures for reduced piston passenger miles (*ibid.*):

1960—286 passenger miles

1961—134 passenger miles

The above changes in jet and piston passenger miles and TWA's actual yields (computed as set forth above, at pp. 84-86) gives estimated net increase of passenger revenues as follows (*id.*, p. 63):

1960—\$23.5 million

1961— 12.2 million

Adding the 5% estimate for non-passenger revenues these figures become (*ibid.*):

1960—\$24.8 million

1961— 12.8 million

for the net estimated additional revenues under subdivision (b).

Twenty Convair 880's—Defendants' Position

The defendants take the position that there is no positive and distinct allegation in the complaint that the delays in delivery of the CV-880s were caused by the defendants; and that the plaintiff has failed during the damage hearings to introduce evidence to link the delays sufficiently with actions of the defendants. The defendants claim that the proof indicates that the delays were due primarily, if not exclusively, to Convair—i.e.—the manufacturer. The defendants cite at pages 142-150 of their brief the references to various contemporaneous documents which were introduced as exhibits in which TWA's representatives described actions or failures to act, on the part of Convair, which might have contributed to delays.

There is an allegation in the complaint that "during the period 1956 to 1960, the defendants required Convair to make certain changes in the design of Model 880 aircraft on order by Toolco. . . ." (Paragraph 19). However, this paragraph in the complaint does not allege that these changes in design resulted in any delays in the delivery of any aircraft, and no evidence of any such delay was introduced. The only specific action of the defendants prior to May 1960 (when the first 880s were delivered to plaintiff) cited by the plaintiff as being active interference by Toolco and defendant Hughes with the deliveries of the planes was the setting aside of three of the 880s from the production line in December 1959 and the stationing by Toolco of armed custodians to guard the planes. But it is clear from a contemporaneous document (Def't. Ex. 127) that Rummel did not consider this action by Toolco in itself to have delayed Convair's production schedule, although it was probable by this time that Convair was not going to be able to deliver on the original schedule.

In an inter-office memorandum written by Rummel to Mr. Charles Thomas, then President of TWA, under date of February 8, 1960, he stated:

"Setting aside the three, now two, aircraft has not adversely affected the Convair production line. In fact this may have helped Convair materially by (1) beneficial reassignment of personnel, (2) permitting more timely completion of engineering, and (3) permitting more orderly, i.e., less out of station construction. Of course, delivery of the two aircraft now set aside is affected. They have been rescheduled for substantially later delivery * * *. Certification has not been adversely affected by setting aircraft aside."

I conclude that the defendants are not chargeable with responsibility for delays in delivery by reason of the December 1959 incident.

On March 2, 1960, the purchase agreement between Convair and Toolco covering all thirty of the CV-880s was changed by amendment No. 4 which established a new schedule for delivery of the planes as follows:

May	1960—4 planes
June	4 "
July	5 "
August	5 "
September	4 "
October	5 "
November	3 "

In my opinion the plaintiff's position that it was entitled to take the original contract delivery dates in measuring the amount of damages is not valid. Rather it should be bound by the revised delivery dates established in Amendment No. 4.

The evidence clearly shows, however, that commencing about May 1960 when Convair was able to offer deliveries, the defendants, as alleged in the complaint, prevented deliveries from being made and caused substantial delays in deliveries.

I have heretofore set forth the references to the testimony of Rummel showing that Hughes assumed personal control of all matters connected with Convair deliveries and that no one else at TWA was permitted to become involved on matters of delivery or acceptance procedures or even to continue acceptance flights. Rummel also testified that after TWA was rendered unable by Hughes to carry out final inspection procedures, numbers of additional aircraft were removed by Convair from the production line in a semi-complete state (Tr. 2807-8). This occurred progressively as TWA could not proceed with acceptance procedures (Tr. 2808). In "the summer" of 1960 Convair tendered seven or eight completed aircraft and Rummel testified that, "We didn't proceed with the flight testing because we hadn't been cleared by Hughes to do so." (Tr. 2766). Also, it is uncontroverted in the evidence that Convair claimed damages from Toolco for delay in delivery and storage costs on nineteen of the twenty planes which eventually went to TWA (Tr. 2757-58, 2764-65); and in 1963 Toolco settled Convair's damage claims for disruption of its business and delays in deliveries by crediting Convair with \$3,750,000.

We turn now to the defendants' computations set forth in the Simat Original Report. Using his methodology described above for Boeing planes in domestic service, Simat reached the following results in respect of the assumed earlier delivery of 20 CV-880s:

Simat assumed the Coverdale estimates of 10.3 added planes for 1960 and 5.3 added planes for 1961; and the estimate of 11.7 million added jet plane miles for 1960 and 6.0 million jet added plane miles for 1961. By analysis of TWA domestic schedules for CV-880s over the period 1961-1963, Simat established by regression analysis the estimated stage lengths of added CV-880 jet service to be 752 miles, although the historical average stage length of existing CV-880 flights was 819 miles. The number of added flights becomes 15,558 for 1960 and 7,978 for 1961.

To the net assumed added seat miles, Simat then applied the "estimated adjusted marginal load factors" (32.3% for 1960 and 22.5% for 1961) and obtained added revenue passenger miles of 333.7 million miles for 1960 and 119.2 million miles for 1961. Since the average stage length of added service was estimated at 752 miles for both years, the number of added passengers becomes 309,239 for 1960 and 110,462 for 1961. TWA's actual average passenger revenue yield per mile was then adjusted proportionately in the same proportion as the actual average trip length bears to the adjusted trip length, and the total added revenues were (DX. 271A, p. VI-16):

1960—\$19.5

1961—\$ 7.3

As for piston aircraft operations, by regression analysis the estimated stage lengths of each type of displaced piston plane was calculated, and the number of deleted piston flights and miles was also estimated for each type of piston plane. The total deleted revenues from piston operations,

similarly computed for each type of piston, and then combined, were (*id.*, p. 20):

1960—\$41.3

1961—\$20.0

Simat, it will thus be seen, estimated very substantial losses in revenues for both years from the assumed additional operations of the twenty 880s.

Discussion of estimated changes in expenses under subdivision (b) is deferred until later. However, the figures for loss of revenue, apart from costs, are significant. In view of the clear preference by airline passengers for jets over pistons, it is almost impossible to accept the conclusion that replacements of piston flights by jet flights would have caused net revenues to decline from \$41.1 million to \$19.5 million in 1960 (more than 50%) and from \$20.0 million to \$7.3 million (more than 65%) in 1961. These figures should be contrasted with the views of the Civil Aeronautics Board as expressed in Order No. E-16195 (December 29, 1960, TWA Ex. 315.4, also reported at 32 C.A.B. 1363). That Order approved the loan agreement which substituted control by independent voting trustees for control by Hughes. Noting that the loan would enable TWA to take delivery of the 20 Convair 440's, the C.A.B. stated:

It appears that the failure to receive this equipment as planned may have played a substantial part in TWA's recent inability to maintain its traffic position relative to its principal competitors. Thus, we note, for example, that the carrier's preliminary traffic reports for the month of November 1960 show that TWA's share of the Big Four domestic passenger market has declined from 23 to 20.2 percent. By way of contrast, United, which was behind TWA, has

caught and passed it, increasing its share from 21.3 percent to 29 percent. It appears to be significant that TWA's major competitors have already taken delivery of much larger jet fleets than TWA is operating and have firm orders for delivery of more. [Footnotes omitted.]

Thus, the C.A.B., an impartial body which is certainly experienced in matters such as these, was of the opinion that the delay in delivery of the Convair 880's had probably resulted in a heavy loss of traffic to TWA, rather than a preservation of traffic as Simat asserts. Simat's conclusion that replacing piston flights with jet flights would result in a heavy loss of traffic can only be viewed with disbelief and reflects on the credibility of his entire approach.

Ten Convair 880's—Plaintiff's Position

Subdivision (c) of the plaintiff's claim for loss of profits in the Domestic Division is based upon the failure to receive ten of the thirty CV-880s originally ordered by Toolco from Convair.

In addition to the more general allegations of the complaint (see Par. 52) the following statements appeared therein:

"In or about April 1956 the defendants arranged for Toolco to place orders for at least 30 Model 880 jet powered aircraft to be manufactured by Convair (par. 17)."

"In November 1960 while the proposal for merger was pending, the defendants arranged for the lease by Convair to Northeast of six of the Convair model 880 aircraft which Toolco had ordered from Convair.

Among the aircraft so leased to Northeast were three aircraft which Toolco previously by an agreement with TWA of May 9, 1960 had assigned to TWA (par. 22)."

There is no disagreement over the fact that the remaining four 880s out of the ten involved in the claim under subdivision (c) were retained by Toolco for some time and later leased by it to Northeast (TWA Ex. 2, p. 10), and were never released by Toolco to the plaintiff.

Earlier we described the main major provisions of the contemporaneous contracts between Toolco and Convair, and Delta and Convair, for a total of forty CV-880s (pp. 101-03). Rummel testified that as a result of this and other reductions in the jets available to the plaintiff, caused by actions of Toolco, TWA was unable "to provide the schedule coverage that was advisable because of lack of equipment for a number of years" (Tr. 1085-86).

Rummel was informed on March 5, 1959 by Toolco representatives that TWA was not to receive ten of the Convair 880s which had been previously ordered (TWA Ex. 2, p. 9; R. Tr. 147). It appears that Toolco had had negotiations with Capital Airlines about selling six to ten of those CV-880s in January 1959. Rummel protested about the cutback in the Convair fleet (Tr. 762-65) as did other TWA officials (Tr. 1165-74, 1193-94). The opposition to the reduction was communicated to the executives of Toolco and to Hughes personally, but Hughes dismissed TWA's objections "summarily" (Tr. 1178-81).

The original contract delivery dates for the ten planes which the plaintiff takes as being the dates when it would have received the ten planes but for the aforementioned actions of Toolco, are as follows (TWA Ex. 2, p. 18; TWA Ex. 4(c)(1), p. 65):

December	1959
February	1960
April	1960
May	1960
June	1960
June	1960
July	1960
August	1960
August	1960
September	1960

and in each case it is assumed by Coverdale for damage computation purposes that the aircraft would have been received on the 15th day of the applicable month.

The additional annual average number of CV-880s available for commercial service was computed on this basis as (TWA Ex. 4(c)(1), p. 66):

1960	5.1
1961	9.9
1962	10.
1963	7.9

(The reduced figure for 1963 results from the fact that, as noted above, TWA actually purchased six of the ten planes in question from Northeast Airlines in the last quarter of 1963, and it was assumed that these six CV-880s would have been among the thirty aircraft in the original Toolco order for such planes).

The Coverdale calculation of additional passenger miles TWA would have recorded each year is similar to the calculations described above (pp. 104-06) for the twenty CV-880s involved in the delayed deliveries. It results as follows (*id.*, p. 67):

1960—351	million additional jet passenger miles
1961—648	“ “ “ “ “
1962—599	“ “ “ “ “
1963—506	“ “ “ “ “

It was assumed that service by TWA for the additional ten CV-880s would have been similar to that which it actually operated with a fleet of twenty CV-880s in 1960 and with a fleet of twenty-six commencing in 1963.

The Coverdale Report then took thirty-six pairs of cities where most of the CV-880 service was concentrated and found that the reduction of piston aircraft service for such pairs of cities was 51% of the jet aircraft service added. Using this ratio, the report then calculated reduction of piston aircraft service as follows (*id.*, p. 70):

1960	—	123 million miles
1961	—	235 “ “
1962	—	247 “ “
1963	—	195 “ “

At TWA's average annual yields, computed on the basis above described, the following are the Coverdale calculations for net increase of passenger revenues (*ibid.*):

1960	—	\$12.9 million
1961	—	\$24.3 “
1962	—	\$21.5 “
1963	—	\$18.2 “

Using 5% additional revenue for non-passenger revenues the total additional revenue figures become:

1960	—	\$13.5 million
1961	—	\$25.5 “
1962	—	\$22.6 “
1963	—	\$19.1 “

In considering whether to allow the full amount of the plaintiff's claim under this subdivision (c) relating to the failure to receive ten CV-880s, the question arises as to whether the plaintiff is justified in using the original contract delivery dates or whether (as in the case of the calculation of damages in respect of the delays in delivery of the twenty CV-880s considered under subdivision (b)), the plaintiff should be required to use the amended delivery dates set forth in Amendment No. 4 of the contract between Toolco and Convair.

For the reasons stated above, it is my opinion that it is reasonable to use the contract delivery dates in Amendment No. 4 in computing its damages under this subdivision (c).

Ten Convair 880's—Defendant's Position

The original Simat estimates in respect of the failure to deliver the ten additional CV-880s are now considered.

Simat assumed the estimates of added planes and added plane miles as computed in the Coverdale Report. By regression analysis the stage lengths for the assumed added service were obtained, as were the stage lengths of the assumed deleted piston service, by types of planes. To the added seat miles assumed, Simat then applied the "estimated adjusted marginal load factors" (32.3 for 1960, 22.5 for 1961, 48.7 for 1962 and 49.4 for 1963) and obtained added revenue passenger miles of (DX 271A, p. VII-15):

1960	—	165.4	million miles
1961	—	224.5	" "
1962	—	519.1	" "
1963	—	435.2	" "

The assumed added passengers were (*ibid.*):

1960	—	163,487
1961	—	211,693
1962	—	494,193
1963	—	422,976

The average passenger revenue yield per mile (adjusted as described above) then produced total added revenues of (*id.*, p. VII-17):

1960	—	\$ 9.7 million
1961	—	\$13.7 “
1962	—	\$33. “
1963	—	\$26.6 “

The total deleted revenues from piston operations, similarly computed for each type of plane, and then combined, were (*id.*, p. VII-21):

1960	—	\$21.0
1961	—	\$37.8
1962	—	\$22.3
1963	—	\$10.2

Discussion of changes in costs under subdivision (c) is deferred until later.

I now take up the Simat Supplemental Report.

During the Simat cross-examination on the original Simat Report, plaintiff's attack was directed primarily to the validity of the concept of a marginal load factor—both before and after adjustment for economic growth. The use of this factor, more than any other, accounted for the wide variation in the estimate of the experts covering domestic operations.

The defendants countered with the statement that with the data then available to them they were confined to

pointing out the "fundamental errors" of the Coverdale Report—that they needed additional data from TWA records if they were expected to produce the best judgment of their expert (Simat) as to changes that would have occurred in operating profits.

The testimony of the defendants' experts was that any realistic estimation of the change in net operating profit requires the construction of an articulated TWA operating plan in which specific consideration is given to how the added jet capacity would be integrated with existing operations, to what types of service would be added, to what existing services would be eliminated in their entirety, and of what shifts in aircraft usage would occur as added jet aircraft displaced other aircraft from their existing usage to displace, in turn, other aircraft in a chain reaction. Since the scheduling and integration of new aircraft capacity is one of the most complex functions performed in the operation of an airline, Simat stated, it cannot be dealt with in generalities but an extensive bank of background information is needed to make appropriately informed judgments concerning the most probable and suitable use of additional aircraft on a route system as heterogeneous as that of TWA, and the resulting effect on operating profit.

The defendants accordingly made a demand for massive additional production of TWA's operating records to enable their experts to construct an operating plan for TWA for the years in question and thus test the validity of their underlying damage theories. This demand was vigorously contested by the plaintiff as unnecessary and too late. It was my opinion that because of the incredibly large spread between the estimates of the experts as to operating results to be expected from the assumed added jet fleet, the Special

Master and any court reviewing the matter were entitled to the best judgment of all the experts, based on every available TWA record, as to the factors involved in their judgment. The defendants' admission that the original Simat Report did not reflect the best judgment of their expert because of the limited source material available, also influenced me. Accordingly, the defendants' belated request was granted as to the production of all available records sought by it affecting the Domestic Division operations of TWA.

I decided that corresponding figures for the International Division operations need not be produced because of lesser complexity of the factors involved in the operations of that Division. For example, the computations of transatlantic load factors were basically undisputed, and the stage lengths of the flights of course did not vary to any considerable degree in the International operations.

This demand for production entailed a substantial delay in the completion of the damage hearings but resulted in a Supplemental Simat Report reflecting, in conjunction with its original report, its final revised estimate of changes in plaintiff's domestic operating revenues. The Supplemental Report did not change estimates of costs, so the Simat cost estimates for the Domestic Division are found in the original Simat Report.

The mass of material furnished by the plaintiff as a basis for the Simat Supplemental Report consisted mainly of TWA's routing charts and on-board reports and on-line passenger revenue yield information for the five-year period 1959-1963. Traffic and financial data for all scheduled flight services were made available by individual flight segments. For each segment of each flight, the information was converted into a form considered suitable by Simat

for computer processing. This information included flight itinerary, departure and arrival time, number of flights per month, type of equipment, classes of service and numbers of seats in each class, and distances between points served.

Basically the differences in method from the Original Report may be summarized as follows:

1. Rather than estimating the average stage length of added and deleted operations by the use of Domestic Division average relationships between stage lengths of existing added and deleted services, the report estimated directly the changes in flight operations by segments and derived the stage lengths from individual flight segment data.

2. Rather than estimating passenger miles on the basis of average divisional marginal load factors, the Report estimated them on the basis of individual segments.

3. Rather than estimating passenger trip lengths on the basis of divisional averages, the Report estimated them likewise on data from the individual flights.

Following is a more detailed description of the methodology used in the Simat Supplemental Report:

The routing charts show the flight patterns over a twenty-four hour period for each aircraft. The on-board reports provide monthly summaries of data by flight number, segment and type of equipment for all revenue flights. They show number of departures and number of revenue passengers. From the origin and destination points, data were obtained for computing aircraft miles and block hours. Block hours are defined as the elapsed time between departure from the gate position before take-off to arrival

at the gate position after landing. From these figures, seat miles were obtained for each aircraft in each segment for each month. Simat then computed the average monthly stage length (aircraft miles divided by departures) and the average monthly load factor (revenue passenger miles divided by seat miles).

The annual average stage lengths resulting were (DX 271A, p. II-12):

<i>Pistons</i>	1959	1960	1961	1962	1963
M-404	161	155	141	—	—
049/749	366	318	265	199	191
L-1049	532	445	426	—	—
L-1049 G/H	722	567	375	336	322
L-1649A	1,414	534	311	299	—
<i>Jets</i>					
CV-880	—	—	821	790	767
B-131	1,888	1,533	1,207	892	648
B-131 B	—	—	—	1,509	1,303
B-331	—	2,027	1,572	1,007	827
B-331 B	—	—	—	479	340
B-720 B	—	—	1,010	967	—
<i>For All Fleets</i>	440	445	489	552	591

The load factors shown were (*id.*, p. II-20):

<i>Pistons</i>					
M-404	64	61	59	—	—
L-049	66	59	58	—	—
L-749	64	63	61	64	63
L-1049	64	59	—	—	—
L-1049 G	70	60	60	61	57
L-1049 H	73	56	—	—	—
L-1649 A	70	59	54	59	56

<i>Jets</i>	1959	1960	1961	1962	1963
CV-880	—	—	66	56	57
B-131	83	69	53	49	56
B-131 B	—	—	—	42	47
B-331	—	64	49	42	43
B-331 B	—	—	—	37	44
B-720 B	—	—	48	50	—
<i>For All Fleets</i>	71	64	57	51	53

Simat next determined his estimate of the monthly operating profit or loss, based on distances actually flown and number of passengers actually carried. He did this first computing revenues and costs under the methodology used in his Original Report and second by computing them under the Coverdale methodology. He summarized his results in the following language:

“While the profit or loss determined under the Simat procedures is, in our opinion, substantially more accurate, the difference is not significant to the present analysis. For both methods demonstrate, with equal certainty, although in different degree, that individual aircraft in each of TWA’s jet fleets varied strikingly in their earning capacity, depending upon their scheduling, and they also demonstrate that, as jets were added, the additional jets were placed on routes where they began to contribute not profits, but losses.”

The Supplemental Report does not make separate estimates according to categories of assumptions, as did the Simat Original Report and the Coverdale Report.

In deploying the assumed additional jet fleet, Simat built a constructive schedule just as TWA historically scheduled such equipment when it in fact received the additional equipment (with certain adjustments not material for understanding the methodology). It selected as

a basis for the schedule of the constructive fleet in each month ("constructive fleet month") the schedule pattern adopted by TWA in the "guide" month, i.e., a subsequent month when the actual jet fleet was closest in number to the constructive fleet. The average jet stage length was computed for each guide month and applied to the total jet miles in the constructive fleet month, to obtain total constructive jet departures. Piston fleet miles and departures were similarly constructed. To determine the traffic carried by the "constructive" fleet, Simat did not use the on-board data furnished by TWA but chose instead an intricate method of computing passengers from data from a competition study of the CAB made in 1966, which tabulates from samples the number of passengers who purchased tickets for travel on TWA, or other airlines, between each combination of cities served by TWA and other airlines. By regression analysis Simat then related the change in the volume of passenger miles between each two successive years, for each flight segment, with the corresponding changes in the volume of seat miles scheduled with jet and piston aircraft. Further regression analysis was used to convert the relationship between changes in non-stop on-line passenger traffic service (traffic carried between a point of origin and a point of final destination) as reported in the CAB Competition Survey, and changes in aircraft services to a relationship between changes in on-board traffic and changes in aircraft services.

Passenger yields were then applied (varying with the estimated length of passenger trip to show "taper" as described in the original Report). The ratio of length of passenger trip to stage length was also computed as in the original Report, with some refinements statistically.

Operating revenues resulted from this application of

yield figures to the passenger miles. The results showed an even greater net loss of revenue for the Domestic Division than shown in the original Report. Total revenues were estimated at \$79.79 million and total costs at \$191.74 million, or a net loss estimated for operating with the assumed additional Domestic fleet of \$111.95 million. Some "alternative" computations are also set forth in the Supplemental Report to "validate" the findings of the Report, but are not otherwise relied upon (DX 371) and accordingly are not discussed in this Opinion.

Conclusions

I have described above the claims of the plaintiff for Domestic Division losses resulting from inadequacy of its jet fleet. I have also examined the methodology used in the reports of the plaintiff's expert witness (Wemple of Coverdale) and the defendants' expert witness (Simat) and their estimates of the financial results to TWA if the hypothesized jet fleet had been received and operated in the years 1959-63. Since the conflicting results as to the amount of damages are based largely upon three assumed factors, the reasonableness of those factors will now be discussed as a preliminary to award of damages under this part of the case (Section IB-Domestic).

The greatest portion of differing results stems from the use by Coverdale of the historical annual average load factor (percentage of available seats which are occupied) for each type of plane to compute the number of net additional passenger miles that would have been flown if the additional planes had been available; and from the use by Simat of the marginal load factor (ratio of the net traffic added by an added flight to the seat capacity added by the

flight) in his computation of the number of net additional passenger miles. (In his Supplemental Report Simat did not denominate this factor as marginal load factor, but for purposes of this discussion the term is applicable to both of his Reports.) In my opinion the historical average annual load factor of the same or similar type of plane involved in the computation is the proper measure to be used. Since it is computed separately for each year it adequately takes into account the steadily decreasing load factors experienced by TWA and by the industry during most of the period covered by the damage claims.

The defendants quite properly state that use of the annual average load factor would not be valid if applied to unlimited assumed additions to traffic. However, the Coverdale report was based upon a limited assumed increase in traffic—limited by the amount of increased traffic assumed by the equipment assumptions of the posited hypothetical TWA jet fleet.

The percentages of seat miles of all types of aircraft assumed to be added by TWA domestically in 1959-63 measured against the total of TWA, American and United; and the percentage of seat miles so added by TWA measured against TWA's historical jet domestic seat miles is shown in the following table (TWA Ex. 444):

**TOTAL AVAILABLE SEAT-MILES OPERATED
DOMESTIC SCHEDULED SERVICE ONLY**

**TWA, UAL AND AAL
ALL AIRCRAFT TYPES, 1959-1963**

Year	TWA, UAL and AAL Historical Seat-Miles (A)	(Millions)	TWA Estimated Additional Seat-Miles (B)	Percent Additions by TWA
1959	21,738		105	0.5%
1960	24,827		910	3.7
1961	29,020		1,018	3.5
1962	34,613		774	2.2
1963	37,969		638	1.7

Year	TWA Only Historical Seat-Miles (A)	(Millions)	TWA Estimated Additional Seat-Miles (B)	Additions Percent
1959	6,492		105	1.6%
1960	6,962		910	13.1
1961	7,487		1,018	13.6
1962	8,623		774	9.0
1963	10,042		638	6.4

(A) Source: CAB Handbook of Airline Statistics (1965 Edition).

(B) Source: C&C Report (May 2, 1966) Volume I, Chapters II-V; Exhibits TWA 42, 42A, 43A and DX 262.

As applied to this posited increase in traffic, I am of the opinion that use of the annual average load factor in the Coverdale Report is reasonable.

A comparison of industry average load factors (scheduled operations of the trunk line air carriers) for the years in question with the TWA average load factors used by

Coverdale also tends to confirm the reasonableness of the Coverdale computations. The industry figures are as follows (DX 271B):

	Jets	Non Jets
1959	79.9	59.7
1960	69.6	55.3
1961	59.5	53.
1962	53.6	52.6
1963	54.	53.3

The use of the marginal load factor by Simat to measure increase or decrease in number of passenger miles is, in my judgment, inappropriate. I note that Simat throughout his testimony refers to the marginal load factor as being appropriate to determine whether an assumed added flight would be profitable. That may well be so for an individual flight under normal industry conditions which do not involve a transition period in which there is introduced into the market a highly preferred new type of equipment. But it seems to me to erroneously exclude from consideration the probability that passengers would be diverted from competitors, who would not have had, under the assumptions here applicable, as great a quantity of jets as they had historically, to TWA which, under said assumptions, would have had more of the jet equipment so highly preferred by the traveling public. Indeed Simat stated (Simat Tr. 9123) "A truly accurate measure of marginal load factor should consider not only the competitive factors but also the other factors I mentioned of increased public acceptance, changes in quality and quantity of air services, and independent of the change in capacity alone." As applied in the Simat Report, these factors have not been sufficiently recognized. I am strengthened in my opinion by the follow-

ing statement of defendants in their brief (p. 220) that even though Simat's methodology led to the mathematical conclusion that TWA would have lost \$95.91 million, if it had operated the assumed additional jet equipment as hereinbefore described: "It was not, of course Simat's opinion that the management of reconstructed TWA would have permitted such staggering losses to accumulate. Management could have drastically cut schedules * * * but while such measures might have avoided the dire consequences of operating * * * [the jet] added plane miles they would not have sufficed to put the added fleet in the black." A mathematical result which varies so widely from the estimate of what would in fact have occurred, must be regarded with great caution.

In terms of passengers carried, the Simat calculations (with marginal load factor being the greatest factor) also result in an unrealistic assumed loss to TWA over the five year period of over 3 million passengers, as follows (TWA Ex. 328):

	Jet Added	Piston Deleted
1959	79,768	138,635
1960	546,707	1,729,434
1961	387,698	1,915,988
1962	564,593	967,280
1963	462,749	350,869
Total	2,041,515	5,102,206

A factor which leads to such unrealistic mathematical results as does the marginal load factor as used herein, should be rejected.

Examples of the unreliability of the results reached by use of the marginal load factor are cited in the Plaintiff's brief (pp. 191-4) as follows:

"In 1959, for example, a period when TWA's actual jet load factor of 83.1% was such as to demonstrate that jet capacity of all airlines was far less than sufficient to fly the passengers who wished to fly in jets, the defendants employ a 'marginal load factor' in computing what would have occurred with more jets of 56.5%. In 1960, the actual figure is 68.6% but defendants use 37.1%. In the year 1961 the actual figure was 55.6%, while the marginal figure used is 31.7%.*

"The fallacies of this approach would be more apparent if quarter-to-quarter figures were employed. For example, in the fourth quarter of 1960, TWA was able to offer 829,780 jet available seat miles. In the first quarter of 1961, it was able to offer 873,704 jet available seat miles—the increase resulting primarily from the deliveries of the first few Convair 880 jet aircraft. Revenue passenger miles for the two periods were respectively 490,699 and 482,514. [TWA Ex. C & C 4 (24)] A simple computation following the principles that Simat espouses indicates a marginal load factor of zero—according to Simat the sole cause of TWA's falling load factors has to be its improvement in equipment, limited as that improvement was.

* * * * *

"From 1959 to 1960 TWA decreased the piston service which it offered by 1,171 million seat miles; the piston passenger traffic which it carried was decreased by 1,054 million revenue passenger miles. The simple-minded computation to which the defendants' cause and effect assumptions lead them is that TWA's piston miles were operated at a marginal load factor of 90%;** that is, that for every 100 piston seat miles subtracted

* * After the adjustment against economic growth, discussed below, the figures are 53.7% for 1959, 31.5% for 1960 and 21.0% for 1961. The defendants' figures were changed several times, and DX 330 is believed to reflect the final estimates.

** The adjustment against economic growth is applied in reverse to make this figure, for computational purposes, an historic 94.5%.

or added by TWA in 1959, 90 revenue passenger miles were subtracted or added as a direct result [DX271B, p. C-23, as modified by DX330]. This being, according to defendants, the sole explanation of the historical trends, they conclude that further decreases of piston mileage offered would have had similar effects, so that any time TWA was led to cancel a piston flight in 1959 it would have cost itself the passengers which would have filled 90% of that piston's seats, while added jets would (according to defendants' jet analysis), have filled only 56.5% of their seats. Any such piston cancellation, whether or not involving a jet replacement, would obviously be a scheduling decision costing TWA a great deal of money.

"Indeed, if there were operative in actual fact something properly describable as a 90% marginal load factor for pistons in 1959, TWA and all other airlines should as a matter of sound business management have made every effort to increase piston mileage so as to take advantage of this extremely favorable market situation. The proper management decision would have been to reverse the developing situation and replace all of the limited existing jet mileage with piston mileage."

The reason for Simat's extraordinarily high estimates of the load factors on displaced piston flights seems to be a fundamentally unsound approach. Simat's marginal load factors for the deleted piston services were calculated by matching decreases in piston passenger traffic with decreases in piston flights. However, it is apparent that some of the decreases in piston passenger traffic were the result of passenger preference for jets, which caused fewer persons to use those piston flights which continued to be operated. Simat paired the deleted piston flights with the total decline in piston passenger traffic from all sources.

To take a hypothetical example, it may be assumed that an airline operated four flights from Point A to Point B with 50 seat piston aircraft, averaging 40 passengers per flight. If it is further assumed that jet competition would cause a loss of five passengers per flight, then each flight would be carrying only 35 passengers. If the airline then withdrew one of these flights, the load factor of the deleted flight should properly be 70% (35 passengers as against 50 seats). However, there has been a total loss of 55 passengers, if the first loss of five passengers per plane is added to the loss attributable to the deleted flight. Using Simat's method of matching deleted flights with the total decline in passenger traffic, the deletion of one 50 seat flight would be deemed to have resulted in the loss of all 55 passengers, rather than the loss of 35 passengers. It is this basic error of methodology which apparently has resulted in estimates of marginal load factors for deleted piston flights which exceed 100% (i.e. exceed the maximum capacity of the deleted aircraft). It is, moreover, apparent that passenger traffic was declining on all major piston flights which were feeling the effect of competition from jets, both on flights which were subsequently deleted and also on those flights which were continued in operation. Matching this total passenger decline with the deleted flights alone has resulted in a completely invalid marginal load factor for deleted piston services, and the result has been to vastly overstate the amount of revenues that TWA would have lost by deleting piston flights.

The defendants counter by giving examples of "absurd results" reached by the Coverdale method, as set forth below, but it is my opinion that the questions they raise in that connection can be rationally answered. At page 245 of the defendants' brief, they point out that Coverdale

would add nearly two billion revenue passenger miles to TWA's domestic traffic from 1959 through 1962, a period in which that traffic declined by 154 million passenger miles; that in 1961 Coverdale bestows on TWA 644 million additional passenger miles heedless of the fact that in that year the entire domestic trunk industry could add only 300 million; and that American Airlines suffered a decline of 500,000 passengers and 339 million passenger miles in 1961 in spite of having added fifteen jets. Where, the defendants ask, were the additional TWA passengers to come from? It appears to me they would probably have come from passengers that were attracted from competitors who would not have had as attractive equipment in type or quantity, vis-a-vis TWA, as they did historically during the years of jet shortage; and that new passengers would also have been attracted by the new and preferred assumed TWA jet equipment. The new jets did not *cause* the historical decreases in traffic admittedly experienced by the industry and by TWA, as the methodology used by Simat seems to dictate.

It should be emphasized that plaintiff has not sought to recoup from defendants its entire operating losses incurred historically during some of the years in question. For example, as pointed out at page 32 of plaintiff's reply brief, in 1961, a year in which Pan-Am and American operated at a profit, TWA's operating losses were \$12 million and its net loss \$15 million before special adjustments (TWA Ex. 94). Its damage evidence claimed that operating results were adversely affected by \$10.6 million by its failure to receive the jets diverted to others and delays in receipt of the jets it did receive. It is that adverse effect upon its operating results alone, for which plaintiff seeks recovery

in its claims based on inadequacy of its jet fleets. Plaintiff has not sought to blame defendants here for the results of a general economic turndown. Rather, since jets were admittedly more attractive to the traveling public than pistons, it is the reflection of customer dissatisfaction with inadequate equipment attributable to defendants' conduct that is here the key element.

The adjustment made by the original Simat Report in the marginal load factor was intended to eliminate such part of the assumed added traffic as was attributable to economic changes. It is true that the economic changes for this period had already occurred and had been fully absorbed by the flight schedules which had historically been operated during those years. Thus, deletion of economic growth factors might be valid in determining the extent to which assumed additional flights might have produced additional passengers for the domestic airline industry as a whole. However, what is at issue here is not how many passengers would have been added to the entire airline industry, but how many passengers would have been added to TWA. While some might have been totally new passengers, others would represent a diversion of existing passengers from other airlines to TWA. In short, the addition of more jet flights might have resulted in a considerable redistribution of airline passengers with great increases for TWA, even though relatively few new passengers are produced for the airline industry as a whole. Therefore, the economic growth factor, while it may be applicable in other contexts, is not properly applicable here.

A second instance of different factors used by the experts was historical "average annual stage length" used

by Coverdale in estimating stage lengths of assumed added flights, as opposed to "marginal stage lengths" used for this purpose by Simat. The factor of annual average stage length of TWA, as used by Coverdale separately for jets and pistons, in my opinion, adequately takes into consideration the various changes in stage lengths accompanying the introduction of jets. The mathematical basis for confirming Simat's estimates of marginal stage lengths of added flights developed, on cross examination, to be unreliable (Tr. 7918-34; TWA Ex. 320; Tr. 7955). No reasonable alternative to use of the annual average stage length by type of plane, as used in the Coverdale Report, was presented to me and I accept the validity of its use as a proper factor to be employed in the calculations of damages. (See TWA Ex. 396). The acceptance of the use of the annual average stage length, as a proper factor, eliminates the need for any discussion at this point of the validity of the factor of average trip length of passengers as computed by Simat.

Also in my opinion the Coverdale Report is reasonable in using actual annual average yield per passenger in computing the dollar yield estimates for assumed added passengers. In my opinion the Simat estimates, using the so-called "fare taper" are less reliable because they fail to take into consideration adequately the jet fare surcharges in existence during much of the period involved, and the varying fare structures in operation for various periods and various classes of travel.

In adopting the Coverdale figures based on TWA's average performance rather than the Simat figures based on declining marginal productivity, I have been influenced by the overall picture of TWA's performance in relation to the performance of all of the other domestic trunk carriers

during the period 1959-1963. In 1959, TWA had the highest operating profit for its domestic operations of any U. S. trunk line. It also operated over many of the most densely traveled long haul routes in the country. Given the strength of its route structure and its 1959 operations, it is reasonable to assume that with adequate equipment TWA would have fared approximately as well in the ensuing years as the trunkline industry as a whole. If a condition of overcapacity had set in, it would be reasonable to assume that TWA would not have fared significantly worse than the other trunks, since it is not asserted that historical TWA was operating too many aircraft during this period. The statistics, however, show that TWA fared far worse during this period than the other trunks. It is clear that during 1960, 1961 and 1962, when plaintiff claims it was short of jets, TWA fell significantly behind the other carriers, and that beginning in 1962 and in 1963 and 1964, when TWA was catching up in terms of jet equipment, it also significantly improved its performance in relation to the other trunk carriers.

These statistics, which are set forth below, are taken from the CAB's 1965 Handbook of Airline Statistics. In Part III, Table 4, figures are given for the entire domestic operations of the domestic trunk carriers for revenue passenger miles, passenger originations and passenger emplanements. Individual figures for TWA are given in Part III Table 18. If the TWA figures are subtracted from the totals for all trunk lines, the TWA figures can then be compared with the totals for all trunk lines other than TWA. In all cases, figures are given as shown in the Handbook, with the final 000's omitted. The comparisons are shown in Chart 1. To compare TWA's post 1959 performance with that of the other carriers, the figures in Chart

1 can be expressed year by year in terms of the percentage increase or decrease in relation to 1959. This comparison is set forth in Chart 2. The divergence between TWA's performance after 1959 in comparison with that of the other trunk lines can be seen even more clearly when the percentage figures in Chart 2 are shown in the graphs which follow that chart.

CHART 1

REVENUE PASSENGER MILES

	1959	1960	1961	1962	1963	1964
All Trunks Other Than TWA	23,547,987	24,782,266	25,286,494	27,402,634	31,079,743	35,127,863
TWA	4,579,229	4,450,933	4,248,298	4,425,206	5,304,013	6,530,505

PASSENGER ORIGINATIONS

	1959	1960	1961	1962	1963	1964
All Trunks Other Than TWA	39,358	40,252	40,018	41,932	47,751	53,828
TWA	5,130	4,932	4,651	4,827	5,629	6,704

PASSENGER ENPLANEMENTS

	1959	1960	1961	1962	1963	1964
All Trunks Other Than TWA	42,526	43,308	43,213	45,639	52,001	58,551
TWA	5,487	5,370	5,139	5,393	6,221	7,412

CHART 2
MEASUREMENT OF PERFORMANCE BY YEAR
IN RELATION TO 1959

	REVENUE PASSENGER MILES					
	1959	1960	1961	1962	1963	1964
All Trunks Other Than TWA	23,547,987	+5.2%	+7.4%	+16.4%	+32.0%	+49.2%
TWA	4,579,229	-2.8%	-7.2%	-3.4%	+15.8%	+42.6%

	PASSENGER ORIGINATIONS					
	1959	1960	1961	1962	1963	1964
All Trunks Other Than TWA	39,358	+2.3%	+1.7%	+6.5%	+21.3%	+36.8%
TWA	5,130	-3.9%	-9.3%	-5.9%	+9.7%	+30.7%

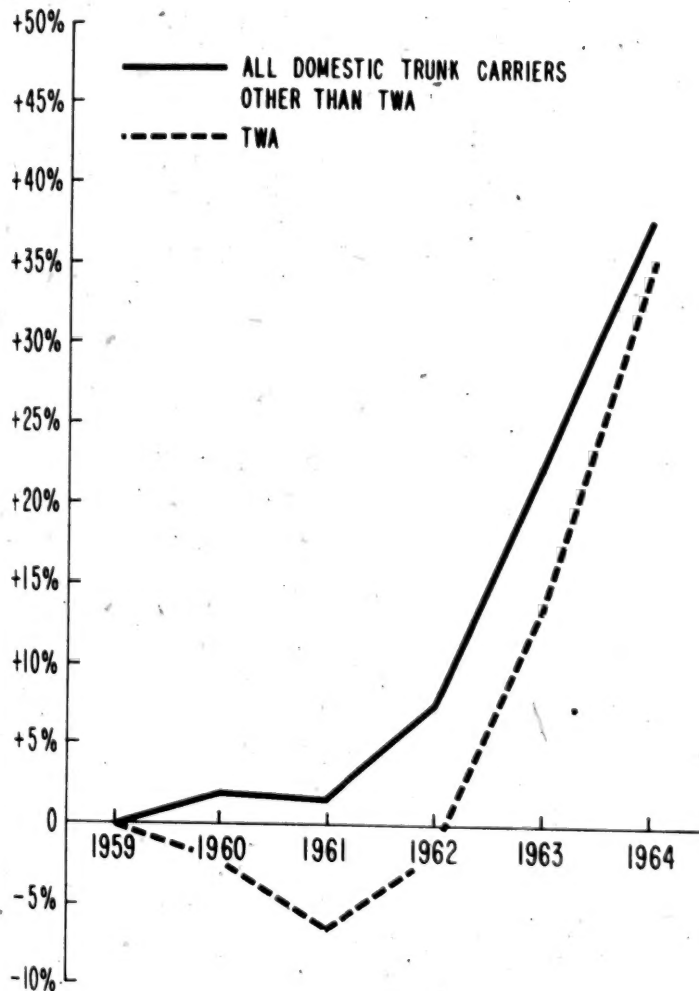
	PASSENGER ENPLANEMENTS					
	1959	1960	1961	1962	1963	1964
All Trunks Other Than TWA	42,526	+1.8%	+1.6%	+7.3%	+22.3%	+37.7%
TWA	5,487	-2.1%	-6.3%	-1.7%	+13.4%	+35.1%

PASSENGER ENPLANEMENTS

PERCENTAGE INCREASE OR DECREASE COMPARED TO 1959

PERCENTAGE
INCREASE OR
DECREASE

— ALL DOMESTIC TRUNK CARRIERS
OTHER THAN TWA
- - - TWA



From this it can be seen that TWA's performance in 1960 and 1961 was significantly worse, when compared to its 1959 performance, than that of the other trunk carriers. In 1962, it turned the corner of recovery, and by 1964 had nearly reached the same level of performance, vis-a-vis 1959, as the other trunks. This strongly suggests that TWA's shortage of jets in these years had a significantly adverse effect on its competitive position. Had TWA's performance been maintained at the same level as the other trunks, its passenger traffic would have been far greater than the levels which it actually experienced. In view of TWA's excellent route structure and its strong performance in 1959, the inference is strong that its failure to maintain its position in 1960 and the subsequent years was due to its shortage of jet equipment, which affected its ability to compete for the available passenger traffic. These statistics make it almost impossible to accept the Simat thesis that TWA would have suffered further drastic declines in passenger traffic if it had replaced piston flights with jets. Rather, the inference is that TWA would have obtained far higher levels of passenger traffic. Therefore, the Coverdale use of TWA's historical average figures to project the additional traffic from the jets would appear to be a conservative estimate.

As to the Domestic Division claims, the plaintiff's proof is sufficiently certain and direct to meet the standards in default situations (*Bigelow v. RKO Radip Pictures Inc.*, 327 U. S. 251 (1946)). The defendants, while raising doubts as to certain aspects of the claims which could undoubtedly have been cleared up if Hughes had been willing to testify, have failed to disprove these claims by any method open to them in the light of their default. Accordingly, I find as follows:

Subdivision (a). The plaintiff's estimates of revenues are reasonable and are adopted by me.

Subdivision (b). The plaintiff's use of original contract delivery dates in the Convair contract is not reasonable. Its estimates of revenues if computed instead on the basis of using the delivery dates provided for in Amendment No. 4 to said contract are reasonable and as so changed (as hereinafter set forth) are adopted by me. After appropriate adjustment of assumed changes in expenses, the net dollar reduction from plaintiff's claim is hereafter shown.

Subdivision (c). The plaintiff's estimates of revenues, modified similarly to use the delivery dates provided for in said Amendment No. 4, are reasonable and as so changed (as hereinafter set forth) are adopted by me. The appropriate related adjustment in expenses is hereafter shown.

As to costs of operation of the assumed added plane miles under subdivisions (a), (b) and (c), I find that if the methods of computation thereof, used by Simat, were applied to the increased traffic and revenue estimates by Coverdale, and which I have adopted as reasonable, they would produce at least as low expense estimates as those of Coverdale, and accordingly I adopt the Coverdale estimates of expenses applicable to subdivision (a), (TWA Ex. 449; Tr. 10,679-82) and the estimates of expenses under subdivisions (b) and (c) modified as above stated; provided, however, that a change in the applicable amount of net interest costs (hereafter discussed), is to be given effect.

After the record in the case was closed I requested counsel for the plaintiff to recompute the damage claim in respect of failure to receive and delay in delivery of the Convair 880s on the basis of using the delivery dates set forth in Amendment No. 4 to the Convair-Toolco con-

tract instead of the original contract delivery dates. The recomputation, with copy to counsel for defendants, has now been submitted to me. Since I have now decided (*supra*, p. 141) that the Amendment No. 4 dates are properly used for computation of damages, I set forth below the amount as computed by the plaintiff to be deducted from the plaintiff's claim in respect of the Convair 880s; and I have arranged to have the recomputation (Letter of Dudley B. Tenney to the Special Master dated August 30, 1968, with enclosures) filed with the Exhibits:

SUMMARY OF EFFECT OF APPLICATION OF REVISED ASSUMPTION THAT DELIVERY DATES FOR THIRTY CV880 AIRCRAFT WERE THOSE SET FORTH IN AMENDMENT NO. 4 IN LIEU OF THOSE SET FORTH IN ORIGINAL TOOLCO-CONVAIR CONTRACT

FOR THE PERIOD SEPTEMBER 30, 1955—DECEMBER 31, 1963

(Amounts in millions)

Increase in income and special items before provisions for income taxes (Price Waterhouse & Co. report, Vol. I p. 5, as revised by \$.2 million in TWA Exs. 42 and 43 and DX262)	\$71.9
--	--------

Adjustments—Add (deduct) (Note 1):— Decrease in gain from operations before provisions for depreciation, obsolescence and amortization, per Coverdale & Colpitts	(\$3.6)
---	---------

Reduction in provisions for depreciation of airframes, engines and rotatable parts due to later timing of the fleet, \$1.9 million in 1960 and (\$.1) million in 1962 (Note 2)	1.8
--	-----

Decrease in proceeds relating to earlier sale of 103 piston aircraft:

Per R. Dixon Speas Associates (.)8)

Less—Reduction in “bad debts”
(Note 3) .2

Decrease in reserve for overhaul of jet aircraft, eliminated at December 31, 1963, resulting from reduced maintenance expense (Note 4) (.)7)

Total adjustments (3.1)

Increase in income and special items before provisions for income taxes, as adjusted to reflect delivery of thirty CV880 aircraft on dates set forth in Amendment No. 4 of Toolco-Convair contract

\$68.8

Since, however, I have elsewhere rejected the plaintiff's claim in respect of the earlier sale of piston aircraft, I eliminate from the foregoing recomputation the items

Decrease in proceeds, etc.	\$(.)8 million
Less reduction in “bad debts”	.2 “

Accordingly the recomputation, as so changed, results in a reduction of the plaintiff's claim in respect of the Convair 880s of \$2.5 million.

(C) **B-331B's**

An additional point is raised by the defendants in connection with the plaintiff's claim under this Section I. It asserts that the cost of operation of the five fan-jet B-331Bs

which were leased by the plaintiff from Boeing was less than the cost of operations of the additional B-331s it would have had in the assumed additional fleet underlying the plaintiff's damage claim. The defendants claim that the savings in operating the B-331Bs in the post-1963 period until the end of the leases in 1971 and 1972 should accordingly be deducted from any damages awarded under this Section I. They estimate such lease period for the five planes at 40.33 aircraft years. On the basis of a historically determined production rate of 4,000 block hours per aircraft, and applying a "conservative" cost advantage of \$100 per block hour, the savings would aggregate \$16.1 million (DX 271A, pp. VIII—10-12; Tr. 8818-19). The defendants state that it is the rule in both tort and contract cases that a plaintiff may recover only for the net effect of defendants' acts after deducting the value of any benefit caused by such acts.

The plaintiff points out that insofar as savings from the operation of the B-331Bs (as against the assumed additional B-331s) for the 1959-1963 period is concerned these estimated savings were deducted fully in the Coverdale computations. And the plaintiff makes no claim for damages based upon operations of its jet fleet in the post-1963 period.

The plaintiff further points out that the defendants had nothing to do with the decision to lease the B-331Bs; it was the Voting Trustees, after the defendants' control of the operations of TWA had ceased, who ordered them; and accordingly the rule of law cited by the defendants has no application to the facts in this case.

The plaintiff finally points out that if one were to attempt to calculate the relative benefit of operating the B-331Bs and the assumed jet fleet in the post-1963 period, it would

be necessary to take into consideration many additional factors ignored in the defendants' calculation. Four such items are listed in the plaintiff's reply brief at p. 130, as follows:

"(i) During the period within which the six owned B-331s would have been fully depreciated, the rental expense for the five leased B-331Bs would have exceeded total depreciation upon the six B-331s by some \$9.5 million [TWA Ex. 353; Simat Tr. 8805-06].

"(ii) If TWA wished to continue operating the five B-331Bs at the end of the lease period, when reconstructed TWA would have owned six fully depreciated B-331s, historical TWA would either have to exercise its option to buy the planes at a substantial figure or have to enter into a new lease [Tr. 8813-15].

"(iii) Six B-331s would have earned more revenue than five B-331Bs, but Simat made no allowance at all for such additional revenue although he thought it 'appropriate to consider the earnings power of the additional B-331, that is, the sixth aircraft' [Simat Tr. 8806, 8810].*

"(iv) No account was taken of the resale value of the six owned B-331Bs [Simat Tr. 8814-16] despite the defendants' statement that airplanes 'cannot be thrown away' [Def. Br., p. 275].*

* "Defendants also take no account of either the ultimate resale value or the post-1963 earning power of the four additional CV-880s which reconstructed TWA would have had in its jet fleet if it had received all 30 CV-880s."

I am of the opinion that the defendants have failed to state any claim for a benefit due to their actions; that their computation of the value of the alleged benefit is fatally deficient; and accordingly no deduction should be made from damages awarded to the plaintiff by reason of the

alleged savings in operations of the B-331Bs in the post-1963 period.

(D) Mitigation Claim

Defendants also claim that the plaintiff should have mitigated its damages by "picking up the four unassigned 880s in 1961"; by accepting the opportunity, which it allegedly rejected, to acquire seven 880Ms available for delivery from Convair from June through December 1961 in Capital Airlines' configuration (or from October 1961 through April 1962 in plaintiff's configuration), and thirteen fan-jet 990s available from Convair for delivery from December 1961 through April 1962 in American Airlines' configuration. The citations in support of the mitigation claim (DX 56; DX 62 pp. V-4, V-9-10; DX 72; DX 74; Tr. 2332-33, 2351-52, 2364-67; DX 78, p. 4; Tr. 2405-08) are generally too indefinite or too incomplete to form a basis for a specific mitigation claim. Evidence from the defendants to complete the picture as to the underlying facts was not available to the plaintiff due to the defendants' default. Indeed, defendants do not even compute the dollar value of their mitigation claim.

The plaintiff correctly points out that Toolco owned the four unassigned 880s and had the rights to the seven 880Ms and the thirteen fan-jet 990s (Rummel Tr. 1534-37) so that Toolco's agreement would have been required to consummate any of the transactions. The independent Trustees of TWA were engaged in a series of bitter controversies, including threats of litigation, with Toolco in 1961-1962 (complaint, paragraphs 35, 37, 38, 39, 40-46), so that no transactions of the kind which the defendants envisage in their mitigation claim would have been feasible as a business matter, especially since the policy of the Voting Trus-

tees favored buying Boeing planes rather than additional Convairs. The defendants' mitigation claim is accordingly rejected.

(E) Adjustment to Reconstructed Interest Cost

The interest cost of the funds that would have been applied to the timely acquisition of a sufficient number of aircraft must next be determined.

TWA introduced the testimony of John C. Biegler, a partner of Price Waterhouse, who used the Drexel Harri-man Ripley financial plan (TWA Ex. 5, Part II) and a reconstructed flight equipment fund take down schedule (TWA Ex. 7(b) 2, VI, B, Schedule B-3) to compute the total interest cost that would have been incurred by Reconstructed TWA during the period October 1, 1955-December 31, 1963 (TWA Ex. 7(b) 2, VI, B, Schedule B-1). This figure was compared with the actual interest cost incurred by Historical TWA (TWA Ex. 7(b) 2, VI, C, Schedule C). After appropriate adjustments Price Waterhouse found that there would be an increase in gross interest cost for Reconstructed TWA over Historical TWA in the amount of \$9.9 million. In addition to this increased cost, Reconstructed TWA would also have incurred added expense to the extent of \$1.0 million, a premium for its early payment of the \$35 million 3¾ percent Equipment Mortgage Sinking Fund Bonds in July, 1955 (TWA Ex. 7(b) 2, VI, A, Schedule A). These costs appear in the plaintiff's "Condensed Summary of Effect of Application of Assumptions" as deductions from the alleged overall reconstructed gain in operating profits (TWA Ex. 50).

The defendants have not attempted to fix the appropriate interest cost. Since I have not accepted the Drexel Harri-
man Ripley financial plan (see pages 257-264) on which
the Price Waterhouse computation relied, I have indepen-
dently calculated the appropriate cost of interest. The
testimony of Biegler indicated that a separate calcula-
tion of reconstructed interest expense would be feasible,
granting certain additional assumptions. (Tr. 6361). I be-
lieve the record is sufficiently complete to allow these as-
sumptions to be taken. However, in my opinion it is not
necessary or feasible for me to construct a complex finan-
cial plan on the order of that presented by Drexel Harri-
man Ripley. Also, I do not find it necessary or feasible to
extend my determinations by making detailed calculations
reflecting complex and minor accounting adjustments.

In reconstructing the interest expense associated with
the additional and earlier purchase of jet flight equipment
I have assumed that funds were available at the time of the
delivery of each aircraft. Except with respect to an item
representing accrued interest on deposits for the purchase
of twenty CV 880's, which is a matter of historical record
and which is discussed hereafter at page 155, I have not
made provision for funds for advance deposits and prog-
ress payments on aircraft purchases. For me to do so on
a reconstructed basis would involve elaborate calculations
and several speculative assumptions not required in recog-
nizing the historical item of accrued interest on deposits
for the twenty CV 880 aircraft. For similar reasons I have
not considered any commitment fees and short-term invest-
ment returns that might be experienced with certain types
of financing. The proceeds from the sale of piston aircraft
were determined to have no material impact on the calcu-
lation of interest. In my opinion, these procedures and
assumptions are fair and reasonable, and they avoid the

substantial amount of speculation or guesswork that would be involved with a more complex calculation.

In arriving at an appropriate deduction for cost of capital, I find that two components must be determined: (1) the amount of funds needed and the timing of the take-downs; and (2) the rate at which the funds are obtained.

(1) *The amount of funds needed and the timing of the take-downs.*

(a) *six additional B-331 aircraft*—The six B-331 aircraft that were diverted became historically available to Pan American on the following delivery dates.*

Aircraft No.

Date Received

N701	November 5, 1959
N702	December 15, 1959
N703	December 30, 1959
N704	March 23, 1960
N705	April 29, 1960
N706	June 8, 1960

To avoid undue complexity I assume that one-third of the funds required for the purchase of these aircraft and related spare parts and equipment would be needed by TWA as of October 1, 1959, one-third as of January 1, 1960 and the balance as of April 1, 1960. As stated in the Price Waterhouse Report, the full purchase price of these aircraft and related spare parts and equipment would amount to a capital expenditure of \$43.1 million (TWA Ex. 7(b) 2, VI, p. 35). I accept this figure.** Accordingly, I assume

* Source: Coverdale Report, TWA Ex. 4-c(1), p. 10. The impact of delivery to TWA at dates earlier than the above dates which Coverdale in its report described as "assumed receipt dates" is considered hereafter at pp. 150-155.

** Defendants' expert, Simat, relied on the Price Waterhouse Report for basic data in computing the cost of capital to effect purchase of the leased aircraft (Simat Report, DX 277A, IX-B-3).

that \$14.4 million would be required as of the beginning of the fourth quarter of 1959, \$14.4 million as of the beginning of 1960 and \$14.3 million as of the beginning of the second quarter of 1960.

(b) *ten additional CV880 aircraft*—It was my determination above at page 141 that TWA would have acquired ten additional CV880 aircraft during 1960 and that delivery would have occurred from May through November of that year. As stated by Price Waterhouse, the full purchase price for these aircraft and related spare parts and equipment would have amounted to \$48.1 million (TWA Ex. 7(b) 2, VI, p. 43). I accept this determination. Accordingly, I assume that one-third of this total amount, \$16.1 million, would be needed as of April 1, 1960, one-third of \$16.0 million as of July 1, 1960, and the balance of \$16.0 million at October 1, 1960.

(c) *earlier delivery of jet aircraft*—I determined above at pages 52, 87 and 141 of this Report that TWA would have acquired its jet fleet prior to the historical delivery dates. With respect to the Boeing fleet, eleven B-131 aircraft and seventeen B-331 aircraft would have been acquired an average of 1.63 months earlier, and nineteen CV880 aircraft an average of 7.74 months earlier as shown in the calculations below.

AVERAGE DELAY IN PURCHASE OF
FIFTEEN B-131 AND EIGHTEEN B-331 AIRCRAFT

<i>Actual and Assumed Receipt</i>	<i>Reconstructed Delivery Date¹</i>	<i>Months Difference</i>
<i>B-131 Aircraft</i>		
1-29-59	11-30-58	2.0
3-17-59	12-31-58	2.5
3-30-59	1-31-59	2.0
4- 3-59	2-27-59	1.0
4-18-59	3-30-59	0.5
4-29-59	4- 3-59	1.0
5-10-59	4-18-59	1.0
5-13-59	5-10-59	0.0
5-24-59	5-13-59	0.5
5-28-59	5-24-59	0.0
6-13-59	5-28-59	0.5
7- 1-59	6-13-59	0.5
7-10-59	6-29-59	0.5
7-14-59	7-10-59	0.0
8- 1-59	7-27-59	0.0
<i>B-331 Aircraft</i>		
11- 5-59	7-19-59	3.5
11-10-59	8-22-59	2.5
11-10-59	8-28-59	2.5
11-25-59	9-22-59	2.0
12-15-59	10- 6-59	2.5
12-23-59	10-27-59	2.0
12-30-59	11- 5-59	2.0
1-18-60	11-10-59	2.0
3-23-60	12-15-59	3.0
4- 1-60	12-30-59	3.0
4- 5-60	1-18-60	2.5
4-14-60	2-29-60	1.5

¹ See determination pp. 52 and 87 this report.

<i>Actual and Assumed Receipt</i>	<i>Reconstructed Delivery Date</i>	<i>Months Difference</i>
4-29-60	3-23-60	1.0
5- 9-60	4-26-60	0.5
5-25-60	4-29-60	1.0
6- 8-60	5- 9-60	1.0
7- 1-60	6- 8-60	1.0
7- 1-60	7- 1-60	0.0
Total		45.5

Average Delay:

$$\begin{aligned}
 &\frac{\text{Total Months Delay } 45.5}{\# \text{ of Aircraft Delayed } 28} = \frac{45.5}{28} = 1.63 \text{ Months} \\
 &= \frac{1.63}{12} = .1354 \text{ Year}
 \end{aligned}$$

AVERAGE DELAY IN PURCHASE OF TWENTY CV880 AIRCRAFT

<i>Actual Receipt</i>	<i>Delivery Date¹ Reconstructed</i>	<i>Months Difference</i>
5-18-60	5-15-60	0.0
1- 1-61	5-15-60	7.5
1- 5-61	5-15-60	7.5
1- 6-61	6-15-60	6.5
1- 8-61	6-15-60	7.0
1-12-61	6-15-60	7.0
1-21-61	7-15-60	6.0
2- 2-61	7-15-60	6.5
2-15-61	7-15-60	7.0
3-15-61	8-15-60	7.0
3-18-61	8-15-60	7.0
3-20-61	8-15-60	7.0
4-26-61	9-15-60	7.5
5- 6-61	9-15-60	7.5
5-25-61	9-15-60	8.5
6- 9-61	10-15-60	8.0
7- 9-61	10-15-60	9.0
8-10-61	10-15-60	10.0
9- 2-61	11-15-60	9.5
10-13-61	11-15-60	11.0

Total 147.0

Average Delay:

$$\begin{aligned}
 &\frac{\text{Total Months Delay}}{\text{\# of Aircraft Delayed}} = \frac{147.0}{19} = 7.74 \text{ months} \\
 &= \frac{7.74}{12} = .6450 \text{ year}
 \end{aligned}$$

¹ See determination page 141 this report.

For the purpose of calculating the effect on cost of capital with respect to the delayed Boeing aircraft I find that a determination that the aircraft would have been delivered earlier requires a matching determination that funds would be needed earlier to effect purchase. As above, in determining the capital amount needed I rely on those figures provided in the Price Waterhouse Report.

As stated by Price Waterhouse the initial cost of fifteen B-131 aircraft would have been \$71.6 million and the cost of related spare engines \$5.9 million or a total of \$77.5 million (TWA Ex. 7(b) 2, VI, pp. 30 and 32). The schedule of reconstructed deliveries above indicates that only eleven of the B-131 aircraft were delayed. On a prorated basis the cost of these eleven aircraft would amount to \$56.8 million.* Price Waterhouse also indicated that the total reconstructed cost for eighteen B-331 aircraft and related spare parts and equipment would have been \$129.3 million (TWA Ex. 7(b) 2, VI, p. 35). Seventeen of the eighteen B-331 aircraft were delayed and the prorated cost of these aircraft is \$122.1 million.** On a fleet basis, the total cost of delayed Boeing aircraft and related spare parts and equipment thus amounts to \$178.9 million. Accordingly, I determine that TWA would have to have had this amount available an average of 1.63 months earlier in order to take delivery at the reconstructed earlier dates.

$$\begin{array}{rcl}
 * \text{ 15 aircraft} & = & \$77.5 \text{ million} = \$5.16 \text{ million per aircraft} \\
 & & \times 11 \text{ delayed aircraft} \\
 \hline
 15 & & \$56.76 \text{ million for 11 aircraft}
 \end{array}$$

$$\begin{array}{rcl}
 ** \text{ 18 aircraft} & = & \$129.3 \text{ million} = \$7.18 \text{ million per aircraft} \\
 & & \times 17 \text{ delayed aircraft} \\
 \hline
 18 & & \$122.06 \text{ million for 17 aircraft}
 \end{array}$$

Similarly, on a reconstructed basis the funds necessary to effect the purchase of the delayed CV880 aircraft would have had to be available to pay for the aircraft on the earlier reconstructed delivery dates. I have determined, as set forth above that these aircraft would have been delivered an average of 7.74 months earlier than the historical delivery dates, and accordingly, actual funds would have had to be available more than seven months earlier.

As stated by Price Waterhouse, the initial cost of the nineteen CV 880 aircraft that would have been acquired earlier would be the historical capital outlay of \$83.0 million, plus a reconstructed amount of \$.5 million for the earlier purchase of spare parts (TWA Ex. 7(b) 2, VI, pp. 43 and 46). This total figure of \$83.5 million includes a \$4.1 million historical payment for interest on an advance deposit. Since I have determined that the funds to pay for the earlier purchase of these aircraft would have been available 7.74 months earlier it is reasonable to assume that the accrued interest on the advance deposit would be reduced. Therefore I determine that instead of the \$4.1 million interest payment, TWA would have paid \$3.5 million, a difference of \$.6 million.* Such an adjustment reduces the total sum needed to purchase the nineteen delayed CV 880 aircraft from \$83.5 million to \$82.9 million.

(2) *The rate at which the funds are obtained.*

In Section II pp. 183-84 I have determined that the *Hanover Shoe* case is controlling on the question of the

* 1. Interest Payment of \$4.1 million at 5.5% (TWA Ex. 7(b)2, VI, p. 44) indicates time period of 51 months.

2. Adjusted period:

$$51 - 7.74 = 43.26 \text{ months}$$

3. Adjusted interest payment on advance deposit:

$$\$4.1 \text{ million} \times 43.26 = \$3.5 \text{ million}$$

proper cost of capital to employ in measuring damages in antitrust cases. According to *Hanover*, the proper rate to employ is the company's external borrowing rate.

In examining the record I find that there is enough evidence of borrowing rates for the period in question to fix an approximate constructive rate for TWA which is both fair and reasonable under the facts and circumstances developed at the hearing. The record discloses that TWA historically negotiated major debt financings on several occasions during the general period in question, 1955-1963. The significant independent borrowings involved the following debt.*

1957 Chattel Mortgage Notes, 5¼% due December 1, 1960	\$ 20.7 million
1957 Bank Loan, 5¼%	\$ 12.0 million
1960 Equipment Mortgage Notes, 6½%, due December 31, 1972	\$114.8 million
1960 Equipment Mortgage Serial Notes, 6%	\$ 85.4 million
1961 Equipment Mortgage Notes, Series B, 6% due December 31, 1977	\$ 57.0 million
1961 Equipment Mortgage Serial Notes, Series B, 5½%	\$ 21.9 million
1961 Subordinated Income Debentures, 6½% due June 1, 1978	\$111.9 million
1963 Convertible Subordinated Debentures, 5¾% due October 1, 1983	\$ 38.5 million

Interest rates for these actual borrowings range from 5¼-6½ percent. Reference to long-term borrowings by

* Source: Price Waterhouse Report, TWA Ex. 7(b)2, VI, Schedule C4.

other airlines at or about this time (1957-1960) indicates that rates on debt financings generally ranged from 5-6½ percent.* Those straight financings (no convertible feature) of more than \$25 million with indicated borrowing rates are listed below:

1958 *Delta*

—Debentures due Oct. 1, 1974, \$25.0 million
6%

Northwest

—Credit 4¼-4⅝% due 1965 \$32.5 million

Northwest

—Notes due October 1, 1978, \$40.0 million
6%

1959 *American*

—Promissory Notes due Nov. \$30.0 million
1, 1996, 5%

1960 *Pan American*

—Promissory Notes 1st installment due 1967, 6% \$50.0 million

Capital

—Secured Notes Series A due \$25.5 million
September 30, 1965, 5½%

American

—Notes, 5¾% \$60.0 million

I also take note that one aspect of the Drexel Harriman Ripley financial reconstruction was a \$90-100 million debt financing scheduled for May 1959 (TWA Ex. 5, Part II, p. 70). Drexel Harriman Ripley made the following appraisal as to the interest rate on this proposal:

* Source: Loeb, Rhoades Report DX270, Part II, Exhibit A.

"We believe that institutional investors, in the second quarter of 1959, would have charged TWA an interest rate of 6% on the used portion of the Series B Flight Equipment Notes, and a commitment fee of $\frac{1}{2}\%$ per annum on the unused portion." (Drexel Harriman Ripley Report, TWA Ex. 5, Part II, p. 70)

The Rate Applicable to the Reconstructed Purchase of the Boeing Fleet—On a reconstructed basis TWA would have purchased its entire Boeing fleet between November 30, 1958 and July 1, 1960.

The record discloses no large-scale financing by TWA at or about the time when arrangements for funds certainly would have been made to effect purchase during the above period, i.e., 1958-1959. Therefore I have looked to those points in the record that suggest a rate that might have been obtained at this time by an independent management seeking funds to purchase a substantial jet fleet. Considering the evidence on airline borrowings recited above on pages 155 through 157, I believe that it is fair and reasonable to fix TWA's borrowing rate for funds needed to purchase the Boeing aircraft on the reconstructed delivery dates at 6%.

The Rate Applicable to the Reconstructed Purchase of the Convair Fleet—However, I find a different interest rate should be used in respect of the thirty CV 880 aircraft. I have previously determined that the reconstructed and timely delivery of a fleet of thirty CV 880 aircraft would have occurred between May 15, 1960 and November 15, 1960. These deliveries would have occurred subsequent, in point of time, to the deliveries of the Boeing fleet. Of the total reconstructed Boeing fleet of thirty-three aircraft only two were delivered after delivery of the first Convair aircraft.

Unlike the case with the acquisition of the Boeing fleet, where there is no evidence in the record of financings directly related, in point of time, to the acquisition of the fleet, TWA did undertake large scale financing approximately seven months subsequent to the first delivery, on a reconstructed basis, of the Convair fleet. From the financial statements submitted in evidence it is reasonable to conclude that the historical purchase of twenty CV 880 aircraft was largely financed by the historical borrowings arranged in December, 1960, referred to above on page 156. Aside from the training aircraft which was delivered in May 1960 the first deliveries of the CV 880 fleet historically commenced immediately after the December 1960 financings.

Under the December, 1960 financing agreements provision was made to sell Equipment Mortgage Notes (of which \$114.5 million were sold) at 6½%, and Equipment Mortgage Serial Notes (of which \$85.4 million were sold) at 6%. The weighted average interest rate for these external borrowings is 6.3%.^{*} There is no significant evidence that TWA could have borrowed at a lower or higher rate at or about the time of the reconstructed delivery dates. Accordingly, I determine that 6.3% should be the rate applicable in computing the additional interest cost that would be connected with the additional and earlier need of funds for the reconstructed acquisition of the CV 880 aircraft.

^{*} Weighted Average interest rate (x)

\$114.5 million	×	6.5%	=	7.443
\$ 85.4 million	×	6.0%	=	5.124
199.9	x		=	12.567
			x	= .063

Reconstruction of Interest Cost

The basic components determined above, i.e., the amount needed, the timing of the take downs, and the rate, allow a computation of an interest cost that is an appropriate deduction from the overall increase in operating profits resulting from the reconstruction of TWA to include the additional and earlier use of jet aircraft. In computing interest charges, an adjustment should be made, however, to the gross capital investment required to give effect to the cash throw-off in the form of depreciation and amortization from the added capital investment. I note that such an adjustment was an integral part of the calculation introduced by Simat with respect to the constructive purchase of the leased aircraft (DX 271A, IX-B), and that plaintiff's counsel in their brief adopted this calculation (Plaintiff's Brief, p. 227). The depreciation and amortization figures associated with the reconstructed additional and earlier use of jet flight equipment have been calculated by Price Waterhouse. They were not materially challenged by the defendants and I accept them as stated. I have used them below in column 2 of Calculations A and B and also in Calculations C and D. Finally, it is assumed that the reconstructed borrowings necessary to finance the purchase of the additional jet equipment will not be paid off prior to December 31, 1963.

Proceeding on the foregoing assumptions and evidence, I have determined that Reconstructed TWA would have incurred additional interest cost over the period 1959-1963 in the amount of \$8.3 million for adding six B331 aircraft, and \$8.7 million for adding ten CV 880 aircraft, or a total of \$17.0 million. The details of these determinations appear in Calculations A and B below.

Adding Six B-331 Aircraft
(\$ millions)

	(1) Adjusted Capital Investment Beginning of Period	(2) Less Depre- ciation and Amortization for the Period ²	(3) Adjusted Capital Investment End of Period	(4) Average Investment for the Period (1) + (3) ÷ 2	(5) Interest at 6 per cent	(6) Interest Cost for the Period (4) × (5)
Fourth qtr. 1959	14.4 ¹	—	14.4	14.4	1½% ³	.216
First qtr. 1960	28.8 ¹	0.4 [•]	28.4	28.6	"	.429
Second qtr. 1960	42.7 ¹	1.1 [•]	41.6	42.1	"	.632
Second half 1960	41.6	2.3 [•]	39.3	40.5	3% ⁴	1.215
1961	39.3	5.1	34.2	36.7	6%	2.202
1962	34.2	4.3	29.9	32.0	"	1.920
1963	29.9	3.6	26.3	28.1	"	1.686
Total increase in interest cost for period 1959-1963						\$8.300

[•] Proration of annual depreciation of \$3.8 million.

¹ See (1)(a) above on page 150.

² Source: TWA Ex. 7(d).

³ One-quarter of annual rate of 6 per cent.

⁴ One-half of annual rate of 6 per cent.

CALCULATION B

Interest Cost 1960-1963

Adding Ten CV-880 Aircraft
(\$ millions)

	(1) Adjusted Investment Beginning of Period	(2) Less Depre- ciation and Amortization for the Period ²	(3) Adjusted Capital Investment End of Period	(4) Average Investment for the Period (1) + (3) ÷ 2	(5) Interest at 6.3 per cent (4) × (5)	(6) Interest Cost for the Period (4) × (5)
Second qtr. 1960	16.1 ¹	1*	16.0	16.1	1.58% ²	254
Third qtr. 1960	32.0 ¹	.6*	31.4	31.7	"	.501
Fourth qtr. 1960	47.4 ¹	1.3*	46.1	46.8	"	.739
1961	46.1	5.7	40.4	43.3	6.3%	2.728
1962	40.4	5.4	35.0	37.7	"	2.375
1963	35.0	4.4	30.6	32.8	"	2.066
Total increase in interest cost for period 1960-1963						\$8.663

• Proration of annual depreciation of \$2.0 million.

¹ See (1) (b) above on page 150.² Source: TWA Ex. 7(d) as amended by letter of Price Waterhouse to Cahill, Gordon of August 30, 1968, Note 2.³ One-quarter of annual rate of 6.3 per cent.

Since historically TWA had the benefits of the earnings generated by the twenty-eight delayed Boeing aircraft and the nineteen delayed CV 880 aircraft after their historical acquisition, in determining damages for delay in receipt of these aircraft, I am concerned only with the loss of profits in the period between constructive deliveries and actual deliveries. I have determined, as stated above, that the average delay in acquisition of the Boeing aircraft was 1.63 months and that the average delay of the CV 880 aircraft was 7.74 months. I find that these are fair and reasonable periods to use in determining the additional interest cost to TWA which would be incurred in financing the earlier acquisitions. Accordingly, I determine that the additional interest cost related to the earlier ownership of the delayed Boeing aircraft would be \$1.4 million, as shown in Calculation C below. The additional interest cost related to the earlier purchase of the delayed CV 880 aircraft amounts to \$3.2 million as shown in Calculation D below.

CALCULATION C

Interest Cost 1958-1960

Earlier Purchase of Twenty-Eight Boeing Aircraft
(\$ millions)

Cost of 11 B-131 Aircraft delayed ¹	56.8
Cost of 17 B-331 Aircraft delayed ¹	122.1
	<hr/>
a. Total cost of earlier Boeing Aircraft	178.9
Less increase in depreciation as a result of the earlier purchase ²	3.7
	<hr/>
b. Net value of earlier investment	175.2
c. Average earlier investment	177.1
$(a + b \div 2)$	
\times annual interest rate ³ .....	.0
	<hr/>
Increased interest cost for one year	10.62
\times average delay .....	.135
	<hr/>
	\$1.438

¹ See determination page 154 above.

Source: TWA Ex. 7(b)2, VI, pp. 30, 32 and 35.

² Source: TWA Ex. 7(d).

³ See page 158 above.

CALCULATION D

Interest Cost 1960-1961

Earlier Purchase of Nineteen CV-880 Aircraft
(\$ millions)

Cost of 19 Aircraft delayed ¹	\$ 82.9
Less increase in depreciation as a result of the earlier purchase ²	\$ 6.8
Net value of earlier investment	<u>\$ 76.1</u>
Average earlier investment (a + b ÷ 2)	\$ 79.5
× Average annual interest rate ³	\$.063
Increased interest cost for one year	<u>\$5.0085</u>
× Average delay	<u>.6450</u>
	<u>\$3.2305</u>

¹ See determination page 155 of this report.

Source: TWA Ex. 7(b) 2, VI, p. 46.

² Source: TWA Ex. 7 (d) as amended by letter of Price Waterhouse to Cahill, Gordon of August 30, 1968, Note 2.

³ See page 159 above.

The total increase in interest cost caused by the additional and earlier purchase of jet flight equipment aggregates \$21.6 million as shown in Calculation E below.

CALCULATION E

Summary of Adjustments to Interest Cost 1958-1963

		(\$ million)
I. Additional Purchase		
Six B-331 Aircraft		\$ 8.
Ten CV-880 Aircraft		8.
		<hr/> \$16.
II. Earlier Purchase		
Eleven B-131 Aircraft and Seventeen B-331 Aircraft		\$ 1.
Nineteen CV-880 Aircraft		3.
		<hr/> 4
	Total	<hr/> \$21

As shown by the above table the proper amount to be deducted from the damages under Section I in respect of interest cost is \$21.6 million. This represents an increase of \$10.7 million over the deduction made by Price Waterhouse (TWA Ex. 50).

(F) Damages under Section I

For the reasons above stated, the amount of the damages under Section I is as follows:

A. International Division		\$22,400,000.
B. Domestic Division	\$29,300,000.	
Less adjustment as to Convair 880s:		
	<u>(\$ 2,500,000.)</u>	<u>\$26,800,000.</u>
Total Net Revenues		\$49,200,000.
Less adjustment relating to interest rate:		
		<u>(\$21,600,000.)</u>
Damages under Section I		\$27,600,000.

An accounting adjustment related to the above damages is made in the final award in Section VIII.

II.

Losses due to being required to lease jets.

The following allegations in the complaint underlie the claim considered in this Section II:

"9. Beginning in or about the year 1939 and continuing up to and including the date of the filing of this complaint, the defendants, Atlas and other persons acting for each of them have been and are now engaged in:

• • •

"(f) Sales and leases of jet-powered aircraft on the condition, agreement and understanding that the purchaser or lessee shall not buy or lease the goods of a competitor or competitors of the vendor or lessor, in violation of Section 3 of the Clayton Act; and

• • •

"10. Each act of the defendants and Atlas herein-after alleged was done in furtherance of the offenses charged in the preceding paragraph and was a part thereof and was done with the primary purpose of restraining and monopolizing the trade and commerce described above. It was the intent of the defendants and Atlas, *inter alia*:

• • •

"(h) That the defendants and Atlas would obtain substantial profits for themselves, at the expense of TWA and other air carriers, as the result of restrictions upon competition in the trade and commerce hereinbefore alleged.

• • •

"20. During the period 1959 to 1960, defendants arranged for the lease to TWA by Toolco of certain jet-powered aircraft on a day-to-day basis. Such aircraft were the first and only jet-powered aircraft made available to TWA by the defendants during the years 1955 to 1960 and the number of aircraft so leased by Toolco to TWA was inadequate for the needs of TWA. Such leases were given on a continuing condition, agreement and understanding that TWA would not purchase or lease aircraft from any other potential supplier thereof. The effect of such continuing condition, agreement and understanding was to foreclose, to all potential suppliers of jet-powered aircraft to TWA other than defendants, the opportunity for selling or leasing jet-powered aircraft to TWA."

The specific allegations set forth in Paragraph 20 above concern a fleet of fifteen B-121 jet aircraft and four B-331 jet aircraft that were historically leased by TWA from Toolco according to a schedule of delivery dates commencing in January, 1959 and ending in December, 1959. These nineteen leased aircraft are among the fleet of sixty-three jets considered in Section I. Except for two B-131 aircraft which were purchased in May, 1960, they were historically purchased by TWA on December 30, 1960.

The plaintiff and its experts contend that the defendants forced TWA to lease these jet aircraft from Toolco instead of permitting it to own them, with the result that TWA had to pay far more to have the use of these aircraft than it would have paid if it had originally bought the aircraft itself. TWA further contends that

"Toolco, on the other hand, not only profited through the receipt of rental payments but also, by taking depreciation on an accelerated basis, created a tax gain for which it claimed capital gains treatment upon ultimate sale." (Plaintiff's Brief, p. 220.)

Proof of Damages

TWA through its financial expert, Morehouse of Drexel Harriman Ripley, included among the "Fundamental Principles of Airline Finance" that an airline should own its flight equipment rather than lease it from other parties. Two minor exceptions to this general principle, the "seasonal interchange" type of lease and the "through run interchange" type of lease were stated. (Drexel Harriman Ripley Report, TWA Ex. 5, Part II, p. 4)

The cross-examination of Morehouse developed the following points:

¶ The equipment represented by the two exceptions, i.e., the "seasonal interchange" and the "through run interchange" type of lease, is a comparatively small part of the total fleet of any airline. (Tr. 3991-3992).

¶ In the opinion of Drexel Harriman Ripley an airline is not soundly financed if its major income producing facilities, as contrasted with what might be described as servicing equipment such as hangars and airport facilities, are not owned. (Tr. 3995).

¶ The principal distinction between the popularity of railroad car leasing and the unpopularity of airplane leasing is the much more rapid development of the state of the art in the aircraft field, but it might be appropriate for an airline to lease rather than buy if it thought that the particular aircraft which it needed presently might be outdated quite shortly. (Tr. 3996).

¶ There has been interest in the use of equipment trust financing for airlines. Equipment trust financing is not particularly germane to the leasing problem, but it is somewhat "in the same ball park." (Tr. 4000).

¶ There are under certain conditions tax advantages such as the investment credit which make it a good business decision to enter into leasing arrangements. The investment credit was not a factor, however, during 1955-1960. (Tr. 3997, 4020-1).

¶ After the investment credit became effective United Air Lines leased a sizeable number of airplanes through a third party group of commercial banks to whom the credit was more valuable than if United had owned or leased directly. (Tr. 4029).

¶ Among the factors to consider in a comparison of the cost of ownership with the cost of leasing would be an estimate of the cost of the capital involved in the purchase of an airplane, and the depreciation on the airplane, when owned, compared with the gross rentals involved in the lease alternative. (Tr. 4013-4014).

¶ Drexel Harriman Ripley believe that it is in the best interests of an airline to retain the greatest degree of control of its income-producing property. Ownership gives that greatest degree of control. A very long lease with reasonably flexible provisions probably involves the giving up of less of the control factor than the opposite extreme, a day-to-day lease which has no assurance of any reinstatement of the lease. (Tr. 4020, 4019).

Operating Profit Lost—TWA has claimed that had it owned the aircraft leased from Toolco in 1959 and 1960 from the date Toolco received them, it would not have incurred actual rental expense aggregating \$7.8 million in 1959 and \$16.4 million in 1960. These rental charges were historically incurred by TWA and were taken from Form 41 reports filed with the Civil Aeronautics Board (CAB) (TWA Ex. 4(c)(1), p. 9). Assuming ownership, TWA's

accounting expert, Biegler of Price Waterhouse, estimated that depreciation on these nineteen aircraft during the actual lease period would be \$4.4 million in 1959 and \$8.5 million in 1960. (TWA Ex. 7(d)). By subtracting these depreciation estimates from actual rentals Wemple of Coverdale computed a "Total Improvement in Gain From Operations" amounting to \$3.4 million in 1959 and \$7.9 million in 1960. In addition, Price Waterhouse estimated a further improvement in gain from operations in the amount of \$1.4 million, representing a reduction in depreciation and amortization expense for TWA on a reconstructed basis during 1961-1963 if the aircraft were owned rather than leased (\$1.0 million in 1961, \$0.1 million in 1962 and \$0.3 million in 1963 (TWA Ex. 7(d)). The total improvement in operating profits over the period 1959-1963 before provision for the cost of funds necessary to achieve earlier ownership would then aggregate \$12.7 million. (Plaintiff's Brief, pp. 221-222).

The cross-examination of Wemple of Coverdale presented the following points:

¶ The leases from Toolco to TWA were approved by the CAB. (Tr. 5040).

¶ Coverdale did not inquire into the question whether TWA should have owned rather than leased aircraft in 1959 and 1960. (Tr. 5047).

¶ No inquiry was made as to whether TWA was in the financial condition to buy the airplanes in 1959 and 1960. (Tr. 5048).

¶ In measuring the difference between owning and leasing insofar as it affects operating expenses cost of capital would not be considered but it would normally be considered in a feasibility analysis of the entire project. (Tr. 5053).

The Cost of Capital—The cost of funds that would be necessary to pay for the ownership of the aircraft which historically were leased is reflected in the Price Waterhouse Report (TWA Ex. 7(b) 2, VI, B) in the form of interest cost. Plaintiff's Brief states the following position:

"This cost of the borrowed money which reconstructed TWA needed to buy the Boeing jets instead of leasing them appears in the reconstructed financial statements prepared by Price Waterhouse & Co., as part of a total provision for all of TWA's financial needs, including, for example, CV-880s as well as Boeings. It is possible, if desired, to allocate a portion of TWA's cost of borrowed money to the acquisition of these jets so as to derive a separate net damage figure for the effects of the wrongful acts alleged in paragraph 20 of the complaint. As indicated in TWA Ex. 314, as of December 31, 1960, reconstructed TWA's weighted average interest rate on outstanding debt was 4.75%, and that is plainly the cost of money properly applicable to buying the leased jets. Applying this interest rate to Simat's average net book value figures for the leased jets for 1959 and 1960 [DX 271A, pp. IX-B-3-4], TWA's 1959 cost of money to buy the leased jets would have been \$2.4 million in 1959 (\$51.3 million x 4.75%) and \$3.4 million in 1960 (\$72.1 million x 4.75%). Reconstructed TWA's cost of capital to own the leased jets during 1959 and 1960 would thus have been \$5.8 million,* not the \$12.6 million calculated by Simat, and on this basis, TWA's net losses from not being allowed to buy the leased jets, stated separately, would aggregate \$6.9 million (before trebling)." (Plaintiff's Brief, pp. 226-227)

*"It must be emphasized that this interest expense is already reflected in the Price Waterhouse & Co. Report as part of the interest which would have been paid by reconstructed TWA. It is not an additional deduction from TWA's claim of \$104.5 million, before trebling."

TWA's basic contention is that the only cost of capital which can be considered in antitrust cases is interest on borrowed money. They cite *Hanover Shoe, Inc. v. United Shoe Machinery Corp.*, 377 F. 2d 776 (3rd Cir. 1967), *rev'd on other grounds*, 88 S. Ct. 2224 (1968), as authority for this position.

Defendants' Answer

The Defendants' Brief asserts that TWA has not presented any evidence in support of its leasing claim other than the computation of Coverdale. Defendants further state that the plaintiff:

"... relies solely on paragraph 20 of the complaint, the allegations of which purport to set forth a violation of section 3 of the Clayton Act. (Pl. Memo., p. 220) Apart from the legal and factual defects of the section 3 charge, nothing in paragraph 20 provides a foundation for the claim that plaintiff was injured by being required to lease aircraft rather than own them. (See pp. 17-18, 103-04 *supra*) There is no claim and no evidence that the rentals were excessive.* Indeed, all of the leases received CAB approval. (CAB Orders E-13542, E-13873, E-14169, E-14504, E-14877)." (Defendants' Brief, pp. 292-293)

* "The rentals were no higher in relation to the value of the aircraft than those paid by plaintiff's post-1960 management to Boeing for the four 720Bs, also a short-term lease which included installed engines. The rental rate for the 720Bs of \$80,000 a month per plane is equivalent to a daily rate of \$2,630, compared with the daily rates of \$2,500 for the B-131s and \$2,940 for the B-331s. (TWA C & C-4(2) for qtrs. ended March 31, 1960 and December 31, 1961) In each case the daily rate amounts to 0.05% of the value placed by plaintiff on the leased aircraft (\$5.1 million each for the 720Bs, \$4.6 million each for the B-131s and \$5.8 million each for the B-331s)." (*Ibid.*)

In an effort to support the propriety of the lease arrangements, the defendants introduced the report of Simat.

Simat testified that the leasing of flight equipment is a common practice among U. S. airlines and that during the period 1955-1963 eleven different trunklines and Pan American leased flight equipment for their scheduled operations at rentals in excess of \$100,000 per year in at least one year, and in some cases in each year, of the period. Simat stressed that the leasing of equipment can, in many instances, reduce the overall costs of the airlines, including the cost of capital, by substituting the credit of the lessor for the credit of the lessee. (Simat Report, DX 271A, Vol. 1, IX and Exhibit IX-A).

Woodfin of Loeb, Rhoades, defendants' financial expert, disputed Drexel Harriman Ripley's contention that an airline should own rather than lease its equipment.

"The relevance to his report of Mr. Morehouse's second principle, that an airline should own rather than lease its equipment, escapes us. We know of no such general principle. A decision as between ownership and leasing must depend upon the facts of each particular situation and requires not only a comparison of the relative costs, including the cost of capital, but also a determination of a company's needs and objectives. We do not attempt to set forth here the reasons why an airline might choose to lease rather than own equipment, but note that leasing of aircraft took place during the 1955-1960 period and remains a fairly common practice in the airline industry today." (Loeb, Rhoades Report, DX 270, Part II, p. 13).

Loeb, Rhoades' representative, Woodfin, was cross-examined on the firm's opinion of this matter and the following points were developed:

¶ Generally, the airlines own their airplanes. Tax considerations dominate the decision to lease. Today, there are a great number of airlines that don't own their airplanes because of tax benefits derived from leasing. (Tr. 7100)

¶ There would not be much concern if a lessor who owned 75 per cent of an airline was leasing planes to the airline on a day-to-day basis because the lessor would be principally interested in keeping the planes in use producing income. (Tr. 7104A-7106)

¶ It would not be of material concern that every jet aircraft that TWA had in 1959 was leased, and that they were all subject to mortgages taken out by Toolco. (Tr. 7106)

¶ Woodfin would not dispute the following view of his partner, Kenrick Gillespie, which was expressed in an advisory letter dated June 8, 1959. (TWA Ex. 258, p. 2):

"The cost of the overall jet program will run well in excess of \$300 million, and permanent financing has not yet been crystallized. The commitment for purchase of the jets was made by the parent, Hughes Tool, and to date the planes are being leased to TWA on a month-to-month basis. This is an interim and unsatisfactory arrangement. We believe that a solution to this problem is imminent and will involve ownership of the aircraft by TWA and permanent financing of a satisfactory nature." (Tr. 7111-7112)

Cost of Capital Defense—The defendants persistently challenged TWA's proof of damages on the leasing claim on the basis that an improper provision was made for the cost of funds necessary to purchase the aircraft. In their

brief defendants argue that TWA's imputation of a debt expense of owning these aircraft as reflected in the overall cost of the financial program designed by Drexel Harriman Ripley is not a sufficient showing of cost.

Instead of using merely debt expense as a cost of capital for the leased aircraft the defendants assert that an overall cost of capital including the cost of equity as well as debt expense should be employed.* Evidence on this point was presented by defendants' witness, Simat, who adopted the cost of capital applicable to TWA which had been established at 10.25% by the CAB for rate-making purposes (Simat Report, DX 271A, IX-6).

Simat computed the average additional investment in the nineteen leased aircraft after depreciation and multiplied this figure by 10.25%. His findings were as follows:

" * * * if they had been owned during 1959 instead of leased [the average additional investment], would have been \$51.3 million greater than historical TWA. With a cost of capital at 10.25%, this would have cost \$5.2 million for 1959. Similarly, the average additional investment in the B-131 and B-331 aircraft after depreciation, if they had been owned during 1960 instead of leased, would have been \$72.1 million greater than historical TWA. Applying the 10.25% cost of capital, this would have cost \$7.4 million for 1960 (Simat Report, DX 271A, IX-7).

Simat concluded that if TWA had owned the fifteen B-131s and the four B-331s instead of leasing them in 1959 and 1960, the costs of ownership (depreciation, amor-

* The concept of "cost of capital" as used by defendants was defined by the District Court in the *Hanover Shoe* case as:

"the rate of return expected by investors on capital funds they place at * * * [a concern's] disposal." (245 F. Supp. at 289-290)

tization and capital) would have exceeded the costs of leasing (rentals paid) by \$1.3 million. (Simat Report, DX 271A, IX-8).

The defendants also contend that *Hanover Shoe, Inc. v. United Shoe Machinery Corp.* should not be interpreted to exclude the cost of equity capital from the computation of antitrust damages in all cases. Defendants' Brief cites several alleged grounds of distinction that exist in this case. Defendants argue that while the Circuit Court characterized the concept of cost of capital as a novel one which had not yet reached the point of general acceptance among economists, and the measurement of which was vague and not susceptible of general agreement, that there are no such questions about the concept in the regulated airline industry.

"[cost of capital] has long been a topic for concern and investigation by the CAB, which must ensure that subsidies and passenger fare levels are adequate to cover all the capital costs of an airline, both debt and equity (DX 271A, pp. IX-5-6) . . . Nor is the measurement vague. After extensive hearings in the General Passenger Fare Investigation, Dkt. 8008 32 C.A.B. 291 (1960), the CAB found the cost of capital for the 'Big Four' domestic trunks, which includes TWA, to be 10.25%. (Id. at IX-6). The figure is susceptible of general agreement. Plaintiff's financial expert, Morehouse, testified that he would accept the cost of capital established by the CAB in determining the costs of ownership" (Tr. 4015-17) (Defendants' Brief, p. 277).

Defendants' counsel raise a further alleged distinction.

"The most important distinction from *Hanover* is the finding in that case by the District Court that Han-

over at all times had sufficient capital to purchase the machinery in question and that, if additional capital had been needed, it would not have raised equity capital but borrowed the necessary funds at an interest rate of 2.5%. 245 F. Supp. 258, 289-92, 299. This finding, affirmed by the Circuit Court, was the sole ground upon which the Supreme Court decided this issue in favor of Hanover. (36 U.S.L. Week at 4649) It did not decide or intimate that the overall cost of capital should under no circumstances be deductible in antitrust cases. The circumstances here are the opposite of those in Hanover. Plaintiff charges that it did not have enough equity, and Morehouse's reconstructed financing provides for the issuance of common stock and convertible debentures. A composite cost of equity and debt is therefore apt for TWA." (Defendants' Brief, p. 278).

The cross-examination of Simat yielded the following pertinent points:

¶ The 10.25 per cent figure is a figure which the CAB concluded was a reasonable figure for the cost of capital of a major airline such as TWA. It includes not only the cost of debt securities but also the cost of equity securities which are no less a cost to the company than the cost of debt. (Tr. 8820).

¶ The Price Waterhouse Report does not cover the full cost of capital, i.e., it covers only that portion of the cost of capital which is represented by the cost of debt financing. (Tr. 8825).

¶ If a business achieves a return in the course of its operations sufficient to meet its cost of capital that portion of the return which relates to the return on equity would appear in the income statement as net earnings or profits. (Tr. 8827).

¶ The cost of equity is actually an estimate of the return on investment which investors must be able to expect from a company's future operations but it is no more an estimate than depreciation expense, and the expired costs of any other assets of the company which are only partially consumed during the period. (Tr. 8832).

Determination of Damages

The allegations of the complaint set forth above (pages 168 and 169) are taken to be "well pleaded." As a result of their default, defendants are found to have admitted each of the allegations included in the paragraphs of the complaint dealing with aircraft leases during the period 1959 through 1960.

The defendants have argued that the principal paragraph in the complaint relative to the leasing claim (par. 20) does not specify any injury as a result of Toolco leasing aircraft to TWA rather than TWA owning these same aircraft. Indeed, the defendants stress that there is no claim that the rents were excessive and that all of the leases received CAB approval. (Defendants' Brief p. 292-293) A reading of paragraph 20 without the other related allegations of the complaint would support this contention. It appears that the singular thrust of the paragraph goes toward the claim that the 1959-1960 leases did not provide a sufficient number of aircraft for TWA's needs and that the provisions of the lease agreements prohibited TWA from buying *or leasing* other jet aircraft from another potential supplier. This aspect of TWA's overall claim is the subject of Section I above, and has been decided in favor of TWA. I am not, however, persuaded that the inquiry under this Section II into the question of damages as a result of these leases should be arrested on the basis of the silence within paragraph 20. I find that

other general allegations in the complaint specify enough grounds of injury to base my findings in this portion of the claim on an evaluation of all the evidence presented rather than on an omission in a specific allegation. For instance, it would appear that the above quoted paragraph 10 subsection (h) would be sufficient to cover damages resulting from leasing rather than owning the aircraft.

TWA's financial expert, Morehouse of Drexel Harriman Ripley, believed that it was a "fundamental principle" for airlines to own rather than lease their flight equipment. The ability to control primary income producing property was cited as of paramount importance. The defendants' expert, Woodfin of Loeb, Rhoades, disputed the Drexel Harriman Ripley proposition as a general principle and cited that leasing of aircraft was a fairly common practice in the airline industry from 1955 onward. (Loeb, Rhoades Report DX 270, Part II, p. 13). However, in cross-examination on the question of the Tooleo-TWA leases, Woodfin stated that he would not dispute the view of his partner, Gillespie, that the 1959-1960 leases were an interim and unsatisfactory arrangement. (Tr. 7111-7112)

The defendants' expert, Simat, gave additional testimony that the leasing of aircraft was common among airlines from 1955-1963; however, no evidence was presented that other airlines leased all their jets during 1959-1960 or that flight equipment rentals of any one airline approximated the \$24.2 million spent by TWA during those years for jets.

There was indication that United Air Lines took some advantage of the investment credit by leasing aircraft through commercial banks but this tax advantage was unavailable in 1959 and 1960. (Tr. 3997, 4020-1). There was no evidence presented that aircraft manufacturers had sufficient financial resources and were willing to lease, or as to the existence of a third party financier who was

ready, willing and able to act as lessor to TWA during the period. I have also noticed that as of December 31, 1960 that of 2,036 aircraft operated by certificated route air carriers in system operations, 1,919 were owned and 117 were leased (Civil Aeronautics Board, Handbook of Airline Statistics, 1961 edition, PI-1).

In view of the paucity of evidence showing that the lease arrangements were superior to ownership, or that TWA was unwilling or incapable of purchasing jets during 1959-1960, I am persuaded, that absent Toolco's control, that TWA would have purchased the 15 B-131 and 4 B-331 aircraft directly from Boeing.

Given this determination, the question of damages from leasing rather than owning centers on the calculation of damages presented in evidence by TWA's expert, Wemple of Coverdale.

As indicated above the calculation was based on two factors: (1) the historical rental payments on the jet aircraft from TWA to Toolco; and (2) a computation of the appropriate depreciation and amortization applicable to the leased jets. Defendants have not disputed the accuracy of the rental payments used in the calculation and no material challenge was made to the determination of depreciation and amortization constructed by Price Waterhouse and testified to by their representative, Biegler (Tr. 6327-6343). I therefore accept the figure of \$12.7 million as the extra costs incurred by TWA by reason of its being forced to lease rather than own the nineteen jet aircraft, but this amount is before the necessary deduction of the cost of funds required for their purchase.

The defendants have urged that the computation of the difference between leasing and owning flight equipment must include an additional deduction of the cost of ownership or "cost of capital." The foundation of this "cost of

capital defense" rests on including as part of the cost of capital an appropriate cost attributable to the cost of equity. Using as their overall cost of capital the rate of 10.25% which had been established by the CAB for rate-making purposes the defendants claim that it would be more expensive to own than lease.

TWA and its counsel have not objected to Simat's formula for computing financial differences between leasing and owning. In fact TWA's counsel adopts Simat's figures for "average additional investment" in computing their own leasing claim separately from their general operating claim. (Plaintiff's Brief, p. 227). However, TWA has vigorously disputed Simat's use of a cost of capital which includes a cost of equity rather than its own estimate of cost of capital which is solely limited to its reconstructed borrowing rate, i.e., 4.75%. TWA's counsel also argues that the recent case of *Hanover Shoe Inc. v. United Shoe Machinery Corp.*, 377 F. 2d 776 (3rd Cir. 1967) *rev'd on other grounds* 88 S. Ct. 2224 (1968) is dispositive on the question of excluding a cost of equity in the computation of damages in antitrust cases. Despite defendants, attempt to distinguish *Hanover* from the facts of this case I find the following language to be a clear statement favoring TWA's position:

"United contends that Hanover's so-called cost of capital should have been treated as an element of the cost of acquiring the machinery. The court below disallowed this item, which was defined as 'the rate of return expected by investors on capital funds they place at . . . [a concern's] disposal,' after hearing the conflicting testimony of expert economists called by each party. It found that 'cost of capital' is an economic concept which allows a company to decide if a certain investment is sound by computing the rate of return which will be required on that investment to jus-

tify expending funds on it rather than in an alternative investment, and that it is measured in terms of percentage of earnings per share of common stock to price per share, and of percentage of net profits after taxes to stockholders' equity. It also found that the measurement of cost of capital was vague and not susceptible of general agreement in its application and that in any event it was not a proper element in the calculation of damages but was only a guide to investment.

"The novel concept which United sought to have approved has not yet reached the point of general acceptance even among economists. We agree with the court below that cost of capital is not sufficiently related to actual costs to be included in an antitrust damage calculation." (377 F. 2d at 791-92)

The U. S. Supreme Court has expressed agreement with this finding. 88 S. Ct. 2224, 2237 (1968).

Accordingly, I do not accept the defendants' figure for the cost of capital as computed by Simat since it is an inappropriate measure of the cost of ownership. I am persuaded that the correct external cost of capital is the appropriate borrowing rate for TWA during the period in question. However, since I have not accepted TWA's reconstructed financial plan which is considered in Section III hereof, the rate which TWA asserts (4.75 per cent) must also be rejected. In Section I pages 147 to 167 of this report I have discussed the problem of adjusting the overall interest cost that must be deducted from the total "loss" in operating profits that I have awarded as a fair measure of damages. There it was determined that an appropriate rate to apply to the purchase of Boeing aircraft would be 6 per cent. Adopting the figures of average additional investment for the nineteen jet aircraft during 1959 and 1960 upon which both parties agree, I have determined

that on a separate basis TWA's damages would amount to \$5.3 million as set forth below:

*Determination of Separate Net Damage Resulting
From Leasing Rather Than Owning Jet Aircraft*

Year	(1) Average Additional Investment in Jets (Net Book Value)	(2) Assumed Interest Rate on Borrowed Funds	(3) Cost of Capital to Own Jets (1) x (2)
1959	\$51.3 million ¹	6%	\$3.1 million
1960	\$72.1 million ¹	6%	4.3 million
Total			<hr/> 7.4 million
TOTAL RENTALS JET AIRCRAFT 1959-1960			(\$ millions) 24.2
Add			
HISTORICAL INCREASE IN DEPRECIATION AND AMORTIZATION COSTS IN 1961-1963 OVER RECONSTRUCTED COSTS ²			1.4
			<hr/> 25.6
Less			
DEPRECIATION AND AMORTIZATION 1959-1960		(12.9)	
COST OF CAPITAL—(3) above		(7.4)	
			<hr/> (20.3) <hr/>
TOTAL NET LOSS BY REASON OF LEASING RATHER THAN OWNING			<hr/> \$5.3 <hr/>

¹Simat Report, Dx 271A IX-B-3-4.

²Price Waterhouse Report, TWA Ex. 7(d).

III.

Losses connected with financing the jets.

The following allegations of the complaint underlie the claims considered in this Section III.

"7. The trade and commerce involved in this action concerns:

.

"(f) The financing in interstate commerce of the United States of the acquisition by sale, lease or other means of aircraft for use by TWA in air transportation in interstate and foreign commerce of the United States."

Paragraph 9 of the complaint alleges that defendants and others engaged in a combination and conspiracy to restrain interstate and foreign commerce in violation of Sections 1 and 2 of the Sherman Act and Sections 3 and 7 of the Clayton Act.

Paragraph 10 of the complaint alleges, in part, as follows:

"10. Each act of the defendants and Atlas hereinafter alleged was done in furtherance of the offenses charged in the preceding paragraph and was a part thereof and was done with the primary purpose of restraining and monopolizing the trade and commerce described above. It was the intent of the defendants and Atlas, inter alia:

.

"(g) That defendants would supply TWA with the aircraft essential to its business only on the condition that TWA would accept such financing arrangements relating to the aircraft as the defendants dictated, and in turn that defendants would allow

TWA to procure financing essential for the acquisition of the aircraft it needed only on the condition that TWA would accept such aircraft as the defendants dictated; and"

• • • • •

The allegations with respect to equity financing are set forth in paragraph 23 of the complaint. The allegations with respect to debt financing are set forth in paragraphs 24 through 28, inclusive, and paragraph 52(c) and (d) of the complaint and are more fully discussed hereafter.

The Proof of Damages

In proof of damages, TWA offered as direct expert testimony the report of Drexel Harriman Ripley, a firm of investment bankers with experience during the 1955-1960 period under consideration, in the financing of airlines and manufacturers of aircraft and jet equipment. Drexel Harriman Ripley "reconstructed" on the basis of certain assumptions given them by TWA's counsel, the TWA financial structure so as to provide what, in their opinion, would be adequate financing for a 63-plane jet fleet and in doing so made the central assumption that beginning in 1955, TWA's management was free to do what was best for TWA. Drexel Harriman Ripley assumed "neither that there was nor that there wasn't" a majority stockholder of TWA such as Toolco. (Tr. 3933)

In their report, Drexel Harriman Ripley stated:

"This report is written in response to the request of Cahill, Gordon, Reindel & Ohl that we give our opinion as to whether Trans World Airlines, Inc., if it had been under an independent and competent management not influenced by any consideration other than the prudent conduct of its operating and financial affairs, during the 1955-1960 period, could have fi-

nanced its projected capital requirements for those years, including specifically the purchase of 15 Boeing 707-131s, 18 Boeing 707-331s, 30 Convair 880s, and all the piston aircraft which were purchased by it and delivered during the foregoing period; and, if so, that we describe the methods by which, in our opinion, such capital requirements should have been financed.

"We have been advised, and assume for purposes of this report, that if Trans World Airlines had been adequately financed the 33 Boeing aircraft could and would have been ordered by an independent and competent management in the fall of 1955 for delivery in 1959 and 1960, and that the 30 Convair aircraft could and would have been ordered by such management in 1956 for delivery in 1960." (Drexel Harriman Ripley Report, TWA Ex. 5, Part II, p. 1)

.

"We are assuming for the purposes of this report that we were engaged by Trans World Airlines as its investment bankers throughout the 1955-1960 period, and that we were thus in intimate and frequent contact with the management and had access to all current information and data having a bearing on finance." (Drexel Harriman Ripley Report, TWA Ex. 5, Part II, p. 3)

.

"We have designed the foregoing financing program* on the basis of projected and reconstructed capital expenditures prepared by Price Waterhouse & Co.; on the basis of reconstructed financial statements prepared by Price Waterhouse & Co.; and on the basis of forecasts of funds generated prepared by Coverdale & Colpitts. And we have used various statements of figures furnished to us by Trans World Airlines pertaining to historical balance sheets, income

* Described below on page 190 of this report.

accounts, and certain other historical financial data.” (Drexel Harriman Ripley Report, TWA Ex. 5, Part II, p. 2)

Drexel Harriman Ripley also considered such other historical data as general financial information about the economy, the airline industry and the stock market.

The Drexel Harriman Ripley Report asserted that there are certain fundamental principles which should govern prudent management of a major airline in arranging its corporate financing, as follows:

“We have consistently maintained that the fundamental principles which should be followed in airline finance, throughout the 1955-1960 period under review, are as follows:

The airline should get, or endeavor to get, its equity or junior capital prior to or simultaneously with getting its senior borrowed capital.

The airline should own its own equipment rather than lease it from other parties.

* * * * *

Contractual commitments for capital expenditures should be prepared for reasonably in advance of the time they are to become due. By this we mean that the airline should plan and arrange its financing program so as to have sufficient liquid capital and/or credit standing to afford reasonable expectation of obtaining the funds required to meet its forward commitments.” (Drexel Harriman Ripley Report, TWA Ex. 5, Part II, pp. 4-5)

In determining TWA's financial requirements and whether it had sufficient equity capital and credit standing to fulfill these financial requirements, Drexel Harriman Ripley accepted the assumptions given it by TWA's counsel, as described above, and proceeded to reconstruct the

financial condition and results of operations of TWA for the 1955-1960 period. In effecting the reconstruction, Drexel Harriman Ripley made adjustments in the historical figures principally to reflect the acquisition and financing of jet aircraft and their operation subsequent to 1958. Timely delivery of jet aircraft was assumed. Drexel Harriman Ripley relied upon a reconstruction of income (loss) and a projected capital expenditure program for 1955-1960 which had been prepared by Price Waterhouse and also gave consideration to projections of cash flow made by Coverdale. (See IV. "Premises and Assumptions," Drexel Harriman Ripley Report, TWA Ex. 5, Part II, p. 5.)

Based on the foregoing considerations, Drexel Harriman Ripley summarized their opinion as follows:

"In our opinion Trans World Airlines could have financed, and if we had been advising it during the 1955-1960 period we would have advised it to finance, the acquisition of the foregoing aircraft and its other capital expenditures by means of the following program, which will be more fully described hereinafter, in addition to the estimated internally generated funds." (Drexel Harriman Ripley Report, TWA Ex. 5, Part II, p. 1)

The financing program recommended was composed of four separate elements, summarized in Plaintiff's Brief as follows:

"(i) An underwritten common stock issue in May 1955 offered preemptively on a share-for-share basis at \$17.50 per share to provide net proceeds of \$55.5 million.

"(ii) A private placement long-term loan commitment with institutional investors in October 1955 for

\$150 million minimum—\$170 million maximum at 4% interest.

“(iii) An underwritten non-preemptive offering in May 1959 of \$60 million of 5% subordinated debentures, convertible into common stock.

“(iv) A private placement long-term loan commitment with institutional investors in May 1959 for \$90 million minimum—\$110 million maximum at 6% interest.” (Plaintiff's Brief, pp. 60-61)

TWA claims that by reason of Toolco's preventing TWA management from adopting and following the above financing program, that TWA has been damaged to the extent of \$97.8 million, of which \$36.9 million (\$12.3 million before trebling) is attributable to Toolco's interference with TWA's equity financing, and \$60.9 million (\$20.3 million before trebling) is attributable to defendants' refusal to permit TWA to arrange debt financing as TWA claims was done by other airlines when the prevailing cost of money was lower.

Plaintiff's Brief states in respect of its claim of \$12.3 million in damages (before trebling) attributable to Toolco's interference with the equity financing:

“TWA is claiming \$12.3 million in damages (before trebling) for the wrongful acts of defendants set forth in paragraph 23.

“This damage is measured by the difference between:

“(i) the net proceeds from a 1-for-1 common stock offering which TWA was forced to make in 1957, when the market price for TWA stock was at one of its lowest points historically and TWA's financial condition was very shaky, so as to enable Toolco to increase its equity interest in TWA, and

"(ii) the net proceeds of a 1-for-1 common stock financing which Drexel Harriman Ripley would have recommended be made by TWA in the spring of 1955 (assuming they were advising TWA in 1955), when the market for stock was far more favorable for a successful equity financing, when TWA's prospects even in the opinion of Toolco's expert witness were rosy, when TWA should have been preparing for the needs of the jet age, and when TWA had already for many years (as set forth in the complaint) been starved of equity." (Plaintiff's Brief, p. 69)

Plaintiff's Brief states in respect of a claim of \$20.3 million in damages (before trebling), attributable to defendants' refusal to permit TWA to arrange debt financing:

"TWA is making a separate claim of \$20.3 million (before trebling) for the wrongful acts of defendants set forth in the foregoing paragraphs.

"This separate claim is based upon the difference between:

"(i) The present value (i.e., the present equivalent of the future burden) of future payments for debt service on TWA's long-term debt historically outstanding on December 31, 1963, and

"(ii) The present value (i.e., the present equivalent of the future burden) of future payments for debt service on long-term debt for reconstructed TWA as of December 31, 1963 with a debt structure of the kind and in the amounts recommended by Drexel Harriman Ripley." (Plaintiff's Brief, p. 120)

In answer to TWA's claim for damages, defendants introduced as direct testimony the Report of Loeb, Rhoades (DX 270) in which its conclusions are stated, as follows:

"The equity financing plan suggested by DHR in the Morehouse testimony as of the Spring of 1955 would have been a plan so contrary to the best interests of TWA and its stockholders that it would not have been accepted or implemented by prudent and competent officers and directors of that company.

"We would not have recommended to TWA or to its stockholders that TWA engage in Mr. Morehouse's proposed equity financing in the Spring of 1955. It could not have been accomplished without Toolco actively participating by subscribing to its proportionate share of the proposed equity offering, and it would not have been in the best interests of TWA's stockholders for Toolco to have done so at that time.

"Our opinion that TWA would have rejected Mr. Morehouse's 1955 equity financing plan is the same on the assumptions that TWA could not or would not have looked to Toolco for assistance in such a financing, or that TWA was widely held with no controlling stockholder.

"Lastly, TWA without the assistance of Toolco, could not have financed the so-called 'reconstructed' capital requirements of \$544.8 million during the period October 1955 through December 1960, on any reasonable basis." (Loeb, Rhoades Report, DX 270, Part II, p. 3)

I have concluded that the investment banking firms of Drexel Harriman Ripley, and Loeb, Rhoades and the witnesses who participated in the preparation of their direct testimony and who submitted to cross-examination with respect thereto are well qualified as experts competent to give testimony as to TWA's financial affairs in the 1955-1960 period. The direct testimony of each discloses a thoroughness of preparation and a familiarity with the subject. The cross-examination of the witnesses was extensive

and searching and most helpful in considering the issue of damages.

The Equity Financing

This Report will consider first the evidence with respect to damages introduced in connection with equity financing.

Paragraph 23 of the complaint alleges as follows:

"23. Subsequent to the acquisition of stock by Toolco in TWA, defendants for reasons of self-interest continuously refused to allow equity financing by TWA except on condition that, as a result of any such financing, Toolco would be enabled to increase its equity position in TWA and instead caused TWA to obtain funds chiefly by means of debt financing. TWA was thus rendered unable to seek the financing it needed for the acquisition of aircraft except upon the approval of defendants. The purpose of the defendants in rendering TWA dependent upon them for such assistance in financing as defendants might choose to provide, and the effects thereof, were, among other things,

"(a) to create and maintain control in the defendants of the business of financing the purchase of aircraft for use by TWA, and

"(b) to strengthen defendants' control over the acquisition of aircraft by TWA."

The Drexel Harriman Ripley Report and Morehouse Testimony Relating to Equity Financing

Drexel Harriman Ripley states that TWA should have known early in 1955 that the jet age was imminent and that provisions must be made for funding substantial capi-

tal expenditures (Drexel Harriman Ripley Report, TWA Ex. 5, Part II, pp. 6 and 10).

The circumstances of the airline industry in early 1955, as seen by Drexel Harriman Ripley, is stated in their report as follows:

"Prior to 1955, the major airlines had experienced five years of good earnings with the trend generally upward. In early 1955 it was generally recognized that the jet age was coming and that large amounts of additional capital from outside sources would be required to acquire jet aircraft and other facilities. However, there were wide differences of opinion as to the type of jet aircraft which would be preponderant. One school of thought favored the 'straight jet'; another favored the gas turbine driven propeller type, generally referred to as the 'prop-jet' or 'turbo-prop'. None of the airlines, so far as we know, could at that time estimate with any degree of certainty just how much additional capital would be required. But it was generally recognized that the amounts would be very large." (Drexel Harriman Ripley Report, TWA Ex. 5, Part II, p. 6)

The Drexel Harriman Ripley Report cites the annual reports of commercial aircraft manufacturers as evidence of the awareness of the airline industry in early 1955 that the advent of the jet age was imminent, but, only the Annual Report of the Boeing Company for the calendar year 1954 (DX 187), which was issued on March 7, 1955, can be helpful in understanding the airline industry's thinking in early 1955. Referring to the Boeing 1954 Annual Report, the Drexel Harriman Ripley Report states:

"Boeing: In its 1954 annual report, published in the early part of 1955, Boeing refers to its B-47 (a jet bomber) as being 'well established' in the military

service, and states that considerable active interest had developed among airline operators in a commercial application of its jet prototype tanker-transport." (Drexel Harriman Ripley Report, TWA Ex. 5, Part II, p. 7)

Drexel Harriman Ripley also cited the Annual Reports for 1953 and 1954 of National Aviation Corporation, a closed-end investment trust which concentrates its investments in the airline and aircraft manufacturing industries, as follows:

"National Aviation 1953 Report: This report states categorically that it was all but a certainty that the (then) piston-engined newcomers (presumably the DC-7 and the Lockheed Super Constellation) were the last of their kind for mass travel by air, the reason being that the few companies concerned with commercial transport were all working on jets.

"National Aviation 1954 Report: This report refers to the British invasion of the U. S. domestic airline market with the Vickers Viscount turbo-prop. And it states that the new 'shape of things to come in 1955-58 is in ferment * * * *.'" (Drexel Harriman Ripley Report, TWA Ex. 5, Part II, p. 8)

Capital Expenditure Requirements in the Jet Age

The Drexel Harriman Ripley Report asserts that in early 1955 TWA could have formed an opinion as to its capital expenditure requirements in the jet age. It stated:

"We doubt that in early 1955 the TWA management could make an accurate estimate of its forward capital expenditure program. But it seems reasonable to presume that the management would have at that

time estimated the six-year total at over \$300 million, and probably nearer to \$400 million." (Drexel Harriman Ripley Report, TWA Ex. 5, Part II, p. 10).

Shortage of Equity Capital

Drexel Harriman Ripley compiled certain statistics which it employed as "yardsticks" for measuring the TWA equity capital in comparison with that of its major competitors (Pan American Airways, American Airlines and United Air Lines). These statistics consisted of (i) Total Operating Revenue; (ii) Net Operating Income; (iii) Net Income Including Capital Gains; (iv) Revenue Airplane Miles Flown; and (v) Available Seat Miles. In addition, Net Operating Income per Revenue Airplane Mile and per Million Available Seat Miles for five years, 1950-1954, and for one year, 1954, were set forth in comparative form (Drexel Harriman Ripley Report, TWA Ex. 5, Part II, p. 11).

Drexel Harriman Ripley applied these "yardsticks" and determined that TWA had a shortage of equity capital. Plaintiff's Brief summarized and stated this matter as follows:

" * * * On the basis of 1954 revenue miles flown and available seat miles, respectively, TWA was 33% to 28% larger than Pan American, 10% to 7% smaller than American, and 9% to 5% smaller than United; using these figures as yardsticks, TWA was short of proprietary capital by from \$69 million to \$74 million in comparison with Pan American, by from \$27 million to \$30 million in comparison with American, and by \$17 million to \$21 million in comparison with United. Using available ton miles as a yardstick, TWA was 12.7% larger than Pan American, 15.6% smaller than American and 13.6% smaller than United, indicating a proprietary capital shortage of \$53 mil-

lion when compared to Pan American, \$21 million when compared to American and \$13 million when compared to United. [Drexel Harriman Ripley Report, Part II, pp. 9-10]" (Plaintiff's Brief, pp. 82-83)

The Drexel Harriman Ripley Report then proceeds to conclude with respect to additional equity required, as follows:

"In the light of the foregoing, and recognizing that TWA was the only company conducting both U. S. transcontinental and transatlantic operations, we believe that TWA would have been well advised in early 1955 to obtain not less than \$50 million of additional proprietary capital. TWA's book net worth at December 31, 1954 was only \$67.2 million, a very low amount in relation to the capital expenditure program which it faced in the (then) next few years.

"It is our opinion that we would have advised TWA in early 1955 to raise not less than \$50 million of additional equity capital. And that it be raised by an underwritten preemptive offering of common stock." (Drexel Harriman Ripley Report, TWA Ex. 5, Part II, p. 10)

Drexel Harriman Ripley supports its opinion that TWA should and could have raised at least \$50 million additional equity capital in 1955 by citing, in addition to TWA's operating results in the 1950-1954 period which compared favorably with its principal competitors, the announcement in March 1955 that TWA's earnings per share in 1954 were double earnings per share for the preceding year 1953, the fact that the general stock market was strong and advancing and that the market for TWA common stock from January 1, 1954 to June 30, 1955 showed a greater percentage advance than the Standard & Poor's Index of Air

Transport Stocks or the Dow Jones Industrial Index, and performed better than its three major competitors.

Drexel Harriman Ripley then concluded:

"Thus, the market for TWA stock in the first six months of 1955 showed no sign that investors were worried about the TWA losses reported for the first quarter. The seasonal character of TWA's operations and those of other airlines was generally recognized." (Drexel Harriman Ripley Report, TWA Ex. 5, Part II, p. 17)

.

"From the foregoing it will be noted that the market for TWA stock was strong in terms of price and trading volume in early 1955, and that market prices were much above book values." (Drexel Harriman Ripley Report, TWA Ex. 5, Part II, p. 17)

The TWA loss for the first quarter referred to above was a loss of \$3,898,000, announced on May 5, 1955 (Drexel Harriman Ripley Report, TWA Ex. 5, Part II, p. 13).

The Drexel Harriman Ripley Report compares the price earnings ratios of TWA with its three major competitors during the period 1950-1955 and notes that TWA was selling at about the same price earnings ratio as United Air Lines, although United Air Lines had a better long-term historical earnings record than TWA and was paying cash dividends whereas TWA was not. During the same period Pan American and American Airlines sold at higher price-earnings ratios. Drexel Harriman Ripley also indicated that in early 1955 the major financial advisory services regarded TWA as an appropriate "hold." (Drexel Harriman Ripley Report, TWA Ex. 5, Part II, pp. 19-20).

The recommendation of the Drexel Harriman Ripley Report with respect to an equity issue by TWA is set forth as follows:

"We would have advised and urged TWA, in the spring of 1955, to put out a major equity issue in the first half of that year. The stock market was strong and its trend was upward. The first half of 1955 was the time for TWA to correct its obviously short proprietary capital position and prepare for the jet age.* We would have recommended that the equity financing be effected in April or May. The regular 1954 year end audit would comply with the SEC rule for listed companies. (Drexel Harriman Ripley Report, TWA Ex. 5, Part II, p. 21)

* In February 1955 General Motors issued and sold \$328 million of common stock. Goodyear Tire & Rubber sold \$45 million in July.

Cross Examination of Morehouse

There is set forth below certain supplemental information developed in the defendants' extensive cross-examination of Edward J. Morehouse of Drexel Harriman Ripley and certain exhibits admitted in evidence. The information set forth is selected to illuminate the Drexel Harriman Ripley Report. However, I did not confine my consideration solely to the information listed below.

¶ Any change in the timing of the financing (including the equity financing) would affect the amount of damages computed under the Drexel Harriman Ripley approach (Tr. 3892).

¶ If, hypothetically, common stock were offered in October 1955 when the market price of TWA stock was \$22 as compared to \$31 in May 1955, there could have been an effect on the amount raised and, therefore, an effect on damages (Tr. 3884-3885).

¶ The Boeing Annual Report dated March 7, 1955 (DX 187) contains the following sentence which had been omitted from the Drexel Harriman Ripley Report:

"Our entry into the commercial field is as yet undetermined. We desire such a commercial development, if it can be accomplished on a sound financial basis and without interfering with our military commitments." (Tr. 4109)

¶ The Boeing 707 prototype was flown in July 1954 (Tr. 4120).

¶ On November 19, 1954, William H. Allen, President of Boeing, quoted a price of \$4.25 million for the commercial version of the jet tanker (DX 95). On December 21, 1955, Noah Dietrich, then Vice President of Toolco and a director of TWA, wrote to Fred Ayers, Senior Vice President of Toolco and also a director of TWA:

"For several years it has been assumed in the air transport industry that jet aircraft would play a prominent role when their design reached the stage of development as to be commercially feasible. Early this year [1955] TWA engineers and representatives of the Tool Company concluded that the time was ripe to commence negotiations for the design and manufacture of jet airplanes which would suit the peculiar requirements of TWA. Because of the tremendous cost of newly designed jet aircraft it was a foregone conclusion that the Tool Company would have to lend substantial financial assistance to TWA. The exact form and extent of such support being left open, pending final determination as to the requirements and the existing financial capabilities of TWA itself." [DX 46]

¶ The article by Selig Altschul, entitled "Financing Patterns to Change for Jet Transport Acquisitions" appearing in the November 7, 1955 issue of AMERICAN AVIATION (DX 31, p. 27) "is probably a reasonably good

description of the picture as it then existed * * * " (Tr. 3985), but Morehouse disagreed with the following statement as being "too general":

"It is important to note that the bulk of financial requirements for the airlines for ordering jets will not come until four years or so from now. This gives them time to work out financing programs.'" (Tr. 3987-3988)

¶ A memorandum from J. P. Ripley of Drexel Harriman Ripley to Berry and Morehouse of the same firm, dated September 23, 1955 (DX 182), summarizing a conference with Curtis Barkes, Financial Vice President of United Air Lines, states:

"Barkes said that just off the top of his head he is thinking along the following lines. He is wondering if we could work out a transaction with Metropolitan by the terms of which [sic] UAL would borrow from the Metropolitan \$30,000,000 within the next two or three months and make a commitment to borrow the balance (presumably about \$90,000,000) on the condition that UAL sell \$30,000,000 of preferred stock. Then UAL could sit down and consider the risks involved in selling the preferred stock right now or waiting until later to sell it. He appreciates the risks involved, but he thinks the market might be better next summer.'" (Tr. 3965)

There is no indication that Ripley asserted the foregoing violated a fundamental principle of Drexel Harriman Ripley or that he was offended by the suggestion of Barkes, contained in DX 182 (Tr. 3967-3968).

¶ The timetable for the hypothetical sale of equity in the spring of 1955, assuming a June 1, 1955 closing and

the retention of Drexel Harriman Ripley by TWA in January 1955 would be (i) two or three weeks to conduct the survey to conclude that TWA required equity financing and to formulate a plan (Tr. 4104); (ii) receipt of approval of recommendations and commencement of work approximately in the middle of March 1955 at the latest (Tr. 4099); and (iii) the filing of a registration statement with the SEC on April 19, 1955, the preparation of which would have commenced as late as a month prior thereto (Tr. 4097), but might take longer so that it might have commenced somewhere between February 19 and the middle of March 1955 (Tr. 4098).

¶ Morehouse expressed doubt that in January 1955 Drexel Harriman Ripley would have known that the Government would on August 1, 1955 give the required consent to Boeing to use Government facilities to manufacture commercial jet aircraft (Tr. 4127).

¶ Drexel Harriman Ripley were instructed to assume that orders for jet aircraft would have been placed in the fall of 1955 and Morehouse stated that:

"... it is not unreasonable to assume that only a few months earlier than that time they would have had enough information about probable costs and probable needs to have estimated that their capital expenditure program would have been in the order of the numbers we have set down here" (Tr. 4169).

¶ In the spring of 1955, the airline would probably have had enough information to know that its needs were going to be in the order of \$300 million to \$400 million (Tr. 4171).

¶ Sometime in the second half of 1955, United Air Lines (for whom Drexel Harriman Ripley was then acting as

investment bankers) first came to some conclusion with respect to what its anticipated expenditures might be for jet aircraft (Tr. 4172).

¶ In concluding that TWA was short of equity, Drexel Harriman Ripley compared TWA revenue per seat miles and available ton miles with its competitors, but did not consider that TWA, during 1954, at the time the comparisons were made, had taken the lead in promoting coach travel (Tr. 4157-4158), and that the statistics for one of the competitors, American Airlines, reflected a 24-day pilot strike in 1954 (Tr. 4157). Thus the TWA revenue per seat mile, "a yardstick" used by Drexel Harriman Ripley in developing the shortage in TWA equity, appears higher in relation to its competitors and according to the Drexel Harriman Ripley approach, resulted in a greater shortage of equity (Tr. 4157-4166).

¶ Airline stocks during May and June 1955 "were volatile and investments in them were speculative in nature." (Tr. 4196).

¶ During the period from January 1, 1946 to May 12, 1955 the equity financing of all airlines aggregated \$47,272,425 (Tr. 4256), the largest of which was an offer by Braniff of \$5,700,000 (Tr. 4257), and TWA accounted for the other three large equity financings, one in 1949 and two in 1952 (Tr. 4256). On July 3, 1945, there was an equity issue of \$42,398,000 by Pan American Airways, coupled with stock purchase warrants to purchase an additional \$36,800,000 (Tr. 4258) (very few of the stock purchase warrants were exercised because of the sharp drop in the Pan American Airways' stock (Loeb, Rhoades Report, DX 270, Part II, p. 8).

¶ The Drexel Harriman Ripley Report recommended a 1-for-1 rights offering of TWA stock in May 1955, yet Ripley in a letter dated August 25, 1955 (DX 193) in speaking of a prospective rights offer of common stock of United Air Lines admitted that a 1-for-3 rights offering would be very high and that "even one to five is pretty high" (Tr. 4262).

¶ Application of the "yardsticks" to TWA produced a TWA equity shortage ranging from \$13 million to \$74 million, the upper end of the range being produced by comparison with Pan American Airways, the only one of the comparable competitors flying the transatlantic run. The absolute dollar comparison of capital indicates that the amount of equity shortage would have been fixed in the upper range. (Tr. 4166)

¶ TWA's need for additional equity was "so bad" that in the opinion of Drexel Harriman Ripley TWA should have rushed to the market and raised the equity in May of 1955 rather than at some later date in the summer. (Tr. 4167)

¶ It is not clear from Drexel Harriman Ripley's records that they actually recommended equity financing to United Air Lines in the fall of 1955. The next equity financing of United Air Lines subsequent to the fall of 1955 was in 1960. (Tr. 4307)

***The Loeb, Rhodes Report and Woodfin Testimony
Relating to Equity Financing***

The Loeb, Rhoades Report (DX 270) constitutes the direct testimony of Gene M. Woodfin, a general partner of Loeb, Rhoades, an investment banking firm of New York City.

value which continued below par value for about eight years. The market price of the common stock did not reach the conversion price based on redemption until December 1954. Also cited was the \$43.4 million sale of capital stock of Pan American on July 3, 1945 through an underwritten offering of capital stock with stock purchase warrants attached, exercisable at \$18 a share. Because of the market decline in 1946 very few of the warrants were exercised (Loeb, Rhoades Report, DX 270, Part II, p. 8 and footnotes). Common stock offerings of domestic trunk airlines during the period from January 1946 to June 1957 were rare and in very small dollar amounts. Of the four major offerings, two were by TWA, one in 1952 for \$10.7 million and the other in 1957 for \$43.4 million, and each of the four larger offerings were underwritten in whole or in part by a principal shareholder (Loeb, Rhoades Report, DX 270, Part II, p. 9).

"This dearth of equity financing was not by design. The airlines were forced to rely on debt financing during the post-war piston era because airline equities had no investment status and most airlines were simply unable to obtain equity financing. For example, W. C. Barkes, Vice President of Finance and Property for United Airlines, explained United's 1955 debt financing program in testimony before the CAB in 1957 in the General Passenger Fare Investigation as follows (United Ex. U-2, Docket No. 8008, pp. 12-13; attached hereto as Exhibit D):

"The 1955 financing program for United was handled entirely by arranging for issuance of debt. This was not a matter of choice, for the ability of United, as well as the industry, to sell equity has been limited. That further increase in equity is necessary and desirable is apparent, but it is equally

apparent that it cannot be accomplished satisfactorily until the present period of depressed earnings is brought to an end.'

"In 1955 airline shares were speculative securities and they were not held in quantity by institutional investors." (Loeb, Rhoades Report, DX 270, Part II, pp. 10-11)

As of June 30, 1955, none of the airlines had obtained any financing for jet aircraft and prior thereto had financed their equipment purchases chiefly out of earnings, cash accumulations from fast depreciation and tax amortization certificates and short-term bank credits. Long-term debt was obtained infrequently. The Pan American 25-year \$60 million loan from a group of insurance companies in May 1955 was for the purpose of financing the acquisition of piston aircraft. (Loeb, Rhoades Report, DX 270, Part II, pp. 11-12)

The fundamental principles of Drexel Harriman Ripley, summarized on page 189 of this report, were challenged by Loeb, Rhoades, which stated:

"We believe that it is unrealistic to postulate a set of principles to which diverse companies in a growth industry with varying needs and abilities should conform."

.

"With respect to Mr. Morehouse's first principle, getting equity prior to or simultaneously with senior debt, it is our experience that most companies raise funds through the sale of common equity or convertible securities only when the need therefor is clearly demonstrable. It is common practice for a lending institution to make a commitment to lend senior debt conditioned upon equity or subordinated debt financ-

ing being done prior to or contemporaneous with the later takedown of the senior funds. A well organized financing plan raises equity only when required, not in unknowing anticipation of possible future needs some years away. As we shall show below, the fact of the matter is that historically no major airline followed Mr. Morehouse's first principle. The facts indicate that during the 1955-1960 period none of the airlines sold equity or securities convertible into equity until the latest date possible and then in amounts as minimal as possible. This is reasonable and what one would expect, rather than the converse suggested by Mr. Morehouse's first principle.

"Mr. Morehouse's third principle, that contractual commitments for capital expenditures should be prepared for reasonably in advance of the time they are to become due, is difficult to quarrel with as a general proposition. The statement of the principle, however, totally fails to answer the important questions of timing and amount. No guidelines are given as to how much money should be raised, by what method or what is meant by 'reasonably in advance.'

"In short, we do not believe that a realistic financing program can be devised or reconstructed upon any such a set of principles of airline finance. Instead, a careful analysis of the factual situation existing in the securities markets, the airline industry at large, and the individual company is required." (Loeb, Rhoades Report, DX 270, Part II, pp. 12-14)

Loeb, Rhoades stated that TWA had no need for equity in early 1955 and that it was doubtful that any TWA management would have been persuaded that TWA, in 1955, was short of equity in comparison with the other airlines. Loeb, Rhoades knows of no airline that bases its equity or debt financing upon its relationship to other airlines using

"yardsticks" such as formulated by Morehouse. (Loeb, Rhoades Report, DX 270, Part II, p. 15)

According to Loeb, Rhoades, the results obtained using the "yardsticks" show a variance in the indicated equity shortage from \$13 million to \$74 million.

"A widely accepted measurement of the strength of a company's capital structure is its debt-equity ratio. On that basis, TWA with its ratio of 78.4% equity to 21.6% debt (p. 10 Morehouse Report) was in a better financial position than American, United and Eastern and equally as well off as Pan American.

" . . . While it likely was recognized by all of the airlines and by their financial advisers in the forepart of 1955 that, at some time in the future, both additional equity and debt financing would be required by each of them to meet the oncoming jet age, no one could be sure of 'when' or of 'how much.'" (Loeb, Rhoades Report, DX 270, Part II, p. 16)

It was Loeb, Rhoades' opinion that the equity issue proposed by Drexel Harriman Ripley was excessive in amount and that it is unrealistic to state that it could have been sold in the spring of 1955.

"It is clear that the \$58.4 million common stock offering proposed by Mr. Morehouse for the Spring of 1955 would have been of astounding size, exceeding by more than \$11 million the sum total of all domestic trunk common stock offerings during the 1946-1955 period.

" . . . To suggest, as Mr. Morehouse does, that TWA or any other domestic trunk airline, could have sold in the Spring of 1955 what was a theretofore unheard of dollar amount of stock is in our opinion utterly unrealistic, unless a financially sound majority stockholder for some reason insisted upon it and

agreed in advance to assure its success." (Loeb, Rhoades Report, DX 270, Part II, pp. 17 and 18)

Loeb, Rhoades thought that the proposed equity financing in May 1955 was premature:

"To have accomplished an offering of \$58.4 million of common stock in the Spring of 1955 Mr. Morehouse would have to have made his recommendations to TWA and had them accepted early in 1955.

"It is common knowledge that in early 1955 there were not yet any jet aircraft available for order by TWA or any other airline and that the magnitude of the orders and investment required by the airlines was unknown. We agree with Mr. Morehouse (p. 6) that, while it was generally recognized that the amounts would be very large, none of the airlines could estimate with any degree of certainty just how much additional capital would be required. Certainly no airline management could have foreseen in early 1955, when or in what amounts, funds would be required for the purchase of jet aircraft." (Loeb, Rhoades Report, DX 270, Part II, pp. 18-19)

The first carrier to order jets was Pan American which placed an order in October 1955 for 25 Douglas DC-8s and 20 Boeing 707s, at a cost of \$269 million. The \$60 million loan arranged May 10, 1955 by Pan American was to finance the acquisition of piston aircraft and to increase working capital. A \$30 million loan on December 19, 1956 was to finance the purchase of 9 DC-7s and make advance payments on 23 707s and 21 DC-8s. Pan American had no equity financing until July 29, 1959. American Airlines ordered 30 707s in November 1955 and in the same month placed privately \$75 million of 4% notes. The following year on September 1, 1956, American placed privately an

additional \$60 million at 4¼% the proceeds of which were added to general funds and were available for the purchase of jet aircraft. American raised no equity until June 15, 1959. United ordered 30 DC-8s at a cost of \$175 million in late October 1955 and also ordered 45 piston aircraft. On December 22, 1955, United arranged with three insurance companies to borrow, prior to March 1, 1959, up to \$120 million and at the same time arranged a \$30 million standby revolving credit with a group of bankers. Two years later, in December 1957, United arranged for another \$130 million bank credit. It was not until November 1960 that it sold equity in the form of convertible debentures (Loeb, Rhoades Report, DX 270, Part II, pp. 19 and 20).

Loeb, Rhoades in their Report concluded that:

"The actions of these airlines clearly indicate that competent management did not raise equity in the mid-1950's as a part of long-range financing for the purchase of jet aircraft." (Loeb, Rhoades Report, DX 270, Part II, p. 20)

Finally Loeb, Rhoades stated that TWA had no use for equity funds in the spring of 1955 since \$35 million of the proceeds of the equity issue was to be used to pay off a 15-year 3¾% equipment mortgage which had been arranged with Equitable in December 1954. (Loeb, Rhoades Report, DX 270, Part II, p. 21)

In the opinion of Loeb, Rhoades, the 1-for-1 preemptive offering recommended by Drexel Harriman Ripley is a drastic measure without historical precedent, unless a major stockholder willingly participates. On such an offering, the market price for TWA would drop lower than \$17.50 as stated by Drexel Harriman Ripley and even at

\$17.50, TWA stockholders would suffer a self-inflicted loss in the aggregate indicated market value of \$44,990,000, and a stockholder who did not purchase additional stock would find his holdings diluted in market value by \$13.50 per share (Loeb, Rhoades Report, DX 270, Part II, pp. 22-23).

No competent management would approve the dilution of the equity position of its stockholders and reduce stock leverage unless the need is clearly apparent and the circumstances pressing:

"In our opinion a prudent and competent management would have considered both dilution and leverage in weighing Mr. Morehouse's proposal to raise equity in the Spring of 1955, and would have decided to postpone any equity financing until the need for the money could be more clearly demonstrated. In our view these considerations would have led to the same result whether the shares of the company were widely held by the public or largely held by a majority stockholder.

"The fact that TWA actually did a one-for-one rights offering in 1957 does not change our view. This was not a public offering underwritten by investment bankers. There was a definitive and immediate need for the funds* and the issue was underwritten by Toolco which had agreed to provide TWA with a minimum of \$34 million of proceeds, exceeding Toolco's pro rata portion by approximately \$2 million. Actually, Toolco subscribed to \$35 million or 80.69% of the issue. (DHR Exhibit: Trans World 7)." (Loeb, Rhoades Report, DX 270, Part II, pp. 24-25)

* See Purposes of Issue Section, DHR Exhibit: Trans World 7.

The Report then took up alternative assumptions as to Toolco:

"(i) If we assume that TWA had accepted Mr. Morehouse's recommendation with respect to the \$58.4 million equity offering in the Spring of 1955 and that Toolco had agreed to take up its pro rata share of the offering in order to maintain its percentage of ownership, such a financing probably could have been done. It is our opinion, however, that such an expensive, premature and unnecessary financing would have been a bad business decision. We would not have recommended such a financing to TWA management or to the stockholders of TWA in the Spring of 1955. If such a recommendation had been made, it is our opinion that it would not have been accepted by TWA management, by its majority stockholder or by its other stockholders.

"(ii) If Toolco could not have been looked to for participation in the suggested equity offering, it is our opinion that it could not have been accomplished. We would not have participated in such an underwriting and it is our opinion that a syndicate could not have been formed to have underwritten such an offering. We have already discussed the difficulties of accomplishing such a large financing under any circumstances, and we believe the impact on the financial community of a declination by Toolco to subscribe to its share of the offering would have doomed the proposal at the outset. In short, had Toolco declined to participate, Mr. Morehouse's suggested 1955 equity financing in our opinion, could not have been accomplished.

"(iii) It is difficult to comment upon the purely hypothetical question presented by the assumption that there was no Toolco and that TWA was a widely-held company with no controlling stockholder. Such was not the case. Moreover, in view of the assistance TWA received as the result of Toolco's financial backing in the post-war years, it is difficult to assume that TWA, absent Toolco, could have been in as good a financial

condition as it was in historically, in the Spring of 1955. Even indulging in the assumption that it was, it is our opinion that no prudent and competent management with due regard for the interests of its stockholders would have accepted the suggested equity financing plan, and if it had, we do not believe that such an offering could have been underwritten." (Loeb, Rhoades Report, DX 270, Part II, pp. 25-27)

Loeb, Rhoades concluded that Drexel Harriman Ripley's proposal was not "doable" and in relation to the amount of common stock sold by the domestic trunk airlines during the entire 1946-1956 period it was "stupendous."

" * * * if the offering had not been held precisely in the Spring of 1955, the subsequent history of TWA's earnings would have made any later offering even more difficult to consummate. Earnings for the third quarter of 1955 were \$4.2 million compared to \$7.1 million for that quarter in 1954 and the fourth quarter earnings dropped to \$100,000 from \$1.3 million the preceding year. (Exhibit F). The years 1956, 1957 and 1958 were all loss years for TWA. (DHR Exhibit: Financials—5). Commencing in June 1955 the stocks of the airline group declined counter to the general market. (DHR Exhibits: General 5 and 7). TWA shares declined from a high of $31\frac{5}{8}$ in June to a low of $22\frac{3}{4}$ in October 1955, and, of course, went much lower thereafter. (DHR Exhibit: Trans World 9). Even accepting Mr. Morehouse's fortuitous selection of late May or early June 1955 for the proposed equity financing, we do not believe it could have been done without the assistance of Toolco. The selection of a somewhat later date would have made the success of any such a proposed financing even more improbable." (Loeb, Rhoades Report, DX 270, Part II, pp. 27-28)

Cross-examination of Woodfin

There is set forth below certain supplementary information developed in the plaintiff's cross-examination during 5½ days of Woodfin, a general partner of Loeb, Rhoades and certain exhibits admitted in evidence. The information set forth below is selected to illuminate the Loeb, Rhoades Report. However, I did not confine my consideration solely to the information listed below.

¶ Woodfin had experience in negotiating the financing of pipelines (Tr. 6762) but prior to 1959, claimed no expertise in airline financing (Tr. 6763).

¶ Woodfin was associated with Loeb, Rhoades when two Seaboard World Airlines' financings were done in 1960 and 1966. Seaboard was exclusively a cargo carrier with a record of operating losses and the financings were effected in part to adjust creditors' claims (Tr. 6767-6771).

¶ Loeb, Rhoades also acted as investment bankers for Northeast Airlines in 1956 and had connections with Capital Airlines (Tr. 6772-6773).

¶ It was not "in the cards" for any independent competent management (forgetting Toolco) to have jumped in and have had a rights offering when they did not need the money in May 1955. (Tr. 6808)

¶ Historically it took a lot of help from Toolco to finance a program substantially less than the \$550 million capital program recommended by Drexel Harriman Ripley. Woodfin does not see how TWA could have financed such a substantial program without the help of Toolco. (Tr. 6813)

¶ The fact that in May 1957 TWA sold 3,337,036 shares of common stock for \$43,381,486 means that with Toolco cooperation TWA could have sold the common stock in May 1955. (Tr. 6822-6823)

¶ It is significant that at the time of the May 1957 equity issue TWA had a real present need for the funds and sold stock despite the downtrend in earnings commencing in June 1955, which was not arrested until the year 1959. (Tr. 6828)

¶ Loeb, Rhoades would not have advised any financing in 1957 if Toolco was content to make the down payments on equipment acquisitions. As pressure to pay installments mounted, a better case was made for financing. Neither Drexel Harriman Ripley nor Loeb, Rhoades would have done the equity financing in 1957. (Tr. 6840)

¶ The 1957 financing was not intended to cover the jets but to pay for the Lockheed 1649 A and 1049 G aircraft and spare parts. (Tr. 7217-7218)

¶ While American Airlines in May 1955 had a ratio of 78% equity to total capitalization and was in a strong balance sheet position to borrow for the jet program, this in the opinion of Woodfin does not mean that an airline should be so operated. With a high equity ratio earnings available for stockholders are going to be reduced. The CAB encourages a 50% debt ratio which provides leverage beneficial to stockholders. (Tr. 6871-6875)

¶ The growth of the domestic passenger airlines particularly in 1953, 1954 and 1955 was not reflected by enthusiasm on the part of stockholders. Airline stocks were speculative without a broad investment appeal (Tr. 6863) but as of October 27, 1954 Loeb, Rhoades stated in an

investment "informatory" (TWA Ex. 207): "The strength in airlines reflects a widening interest in this group which we have been recommending for some time, believing that finally some of the basic problems are being overcome." (Tr. 6887A)

¶ A Loeb, Rhoades informatory on American Airlines commented that its 80% ratio of equity to total capital puts it in the strongest position of any airline to meet the financial demands of the jet program (Tr. 6875).

¶ In 1954-early 1955 the outlook for commercial jets continued uncertain. Boeing had not received permission from the U. S. Air Force to use the tanker-jet tooling and the Renton, Washington plant to build a commercial version of the tanker-jet, there remained questions about the functioning of jet aircraft in hot weather, noise, and whether the airline industry would decide upon turbo-props such as the Electra (Tr. 6889-6892).

¶ Several issues of aviation trade journals in the late summer and early fall of 1954 carried accounts of Boeing's prospects for the manufacture of a commercial jet, its ability to satisfy U. S. Air Force obligations and also meet commercial requirements and the estimate that the capital requirements of the commercial airline industry would range between \$1.5 billion to \$3 billion over the next 10 years. (Tr. 6900-6907).

¶ On November 19, 1954 Allen, President of Boeing, wrote Damon, President of TWA, with a carbon copy to Hughes (DX 95A), stating that the time had arrived to negotiate with the airlines for a commercial ship but pointing out that before actual construction can begin, Boeing must obtain from the Air Force permission to use the tool-

ing designed and constructed for the Air Force contract and also permission to use a portion of the Government-owned plant at Renton, Washington. To assist in negotiating with the Government, Boeing suggested a "production type contract", which would become binding upon both parties on receipt of notice given by Boeing if the final price is within the maximum price and the delivery schedule is as favorable and the aircraft specifications are substantially the same as set forth in the production notice contract. The indicated sales price was in the neighborhood of \$4,250,000 per aircraft assuming a quantity of 50 (Tr. 6908-6912).

¶ American Aviation Daily of December 3, 1954 (TWA Ex. 216) observed that the prototype aircraft for the Boeing 707 jet had 40 hours flight time with the original set of jet engines which was a remarkable record for prototype aircraft according to Boeing (Tr. 6914-6915).

¶ Woodfin was aware in December 1954 that Pan American was negotiating for Boeing commercial jets (Tr. 6937, TWA Ex. 219).

¶ Loeb, Rhoades was aware that there was active interest in commercial jets in the fall of 1954 and considered this in preparing their direct testimony. But at that time no one could ascertain who would order what and when, and what the delivery timetable would be. Loeb, Rhoades' opinion would not be affected by knowledge that Pan American Airways was seriously negotiating, for that was a fact. (Tr. 6920-6923)

¶ Woodfin was aware in January 1955 that United was negotiating for DC-8 jets for delivery starting in 1960 and

possibly 1959 and United actually ordered jet aircraft in the fall of 1955 (Tr. 6943-6944).

¶ In January 1955 Boeing was interested in commencing active negotiations with TWA on specifications for its jet aircraft (Tr. 6947, DX 10).

¶ The payment of \$10,000,000 for an option to purchase 15 jet aircraft to be delivered four years later at a total cost of \$75,000,000 would not, in Woodfin's opinion, require raising money to finance the option in January 1955. (Tr. 6950-6951).

¶ When asked was it not obvious in early 1955 to everyone in the airline business that millions and millions of dollars would be required for financing jet aircraft? Woodfin replied:

"A. As to exactly when the sums of money would have to be produced and how much outside money would have to be produced was all a function of how the airlines operated, what cash flow off they had from depreciation and earnings, what cash they had available, from tax acceleration certificates, and the rest of it, how much outside money was going to be needed and how many airplanes were actually going to be ordered. I don't think anybody knew. There was a lot of speculation, of course." (Tr. 6957)

¶ Woodfin did not consider the equity financings by other airlines in the years covered by the complaint prior to 1955. TWA Ex. 224 sets forth a record of equity financings, including convertible preferred stock, for the period from 1939-1945, inclusive (Tr. 6980-6983).

¶ The price of an airline's common stock is a highly material consideration to an airline company and its investment bankers contemplating an issue. (Tr. 7046).

¶ In determining whether a common stock issue is doable an underwriter would look at the common equity financing of other companies in the same period. It would do no good to examine issues of convertible preferred, convertible debentures or any other different securities (Tr. 7073-7074).

¶ In December 1955 United Air Lines completed the "largest single financing program in the history of the airline industry . . . as part of its long range preparation for jet airliner operations." This aggregated \$150 million. (TWA Ex. 180, p. 6, Tr. 7084).

¶ In May 1955 TWA did not know what aircraft was to be ordered. When the equipment program had been determined they would have discussed their money needs with Equitable who held their equipment mortgages. However, contrary to United which had its best year in 1956, TWA earnings started downhill in the second half of 1955 and operations continued to show a loss in 1956, 1957 and 1958. This barred TWA from approaching Equitable (Tr. 7114-7116).

¶ Loeb, Rhoades would not determine TWA's financial requirements by employing the "yardsticks" used by Drexel Harriman Ripley. These yardsticks are used to measure efficiency of airline operations and the efficient use of capital and the statistics are more meaningful for flight engineers and operating people (Tr. 7122-7123).

¶ In May 1955 there had not been a sizeable common equity offering by airline companies for several years and Loeb, Rhoades had serious doubts that the stock market would absorb a \$50,000,000 issue. (Tr. 7130).

¶ Woodfin agrees "as a generalization" that stock should be sold first before selling debt, a general principle set

forth by John F. Childs, Vice President, Irving Trust Company, in an article entitled "Long Term Financing" appearing in the Corporate Treasurer's and Controller's Encyclopedia, Volume 2, page 435 (Tr. 7133), but none of the airlines sold equity before selling debt and the most natural and normal practice is to couple the sale of debt with equity (Tr. 7136).

¶ On May 3, 1955 Loeb, Rhoades stated in a Research Department informatory (TWA Ex. 201) that American Airlines with a ratio of 78% of equity to total capitalization was in need of no financing until the jet program and then probably would be in the strongest position of any of the airlines to finance the program (Tr. 7189).

¶ Woodfin is in fundamental disagreement with the Drexel Harriman Ripley proposal that capital be doubled and stock be sold below book in May 1955 when TWA had no precise information with respect to its aircraft requirements (Tr. 7249).

¶ Woodfin objects to paying off in June 1955 an equipment mortgage loan obtained from Equitable Insurance Company in December 1954 believing it would put TWA in a very strange position in the fall of 1955 when it returned to the insurance companies to get a loan commitment (Tr. 7250-7251).

¶ In 1957 when historically TWA sold common stock to its stockholders the jet age was much closer and there was a very definite use for the money. 75% of the 25% minority stockholders subscribed for the stock (Tr. 7261-7262).

¶ TWA was the only one of the big four airlines which did not pay a dividend. If funds were sought from stockholders in May, 1955 before the details of the jet acqui-

sition program were known and when there was no immediate need for the funds it would be taxing the stockholders (Tr. 7285).

¶ Offering additional stock substantially below the market involves the risk of depressing the after-market to the detriment of all stockholders (Tr. 7307-7308).

¶ In January or February of 1955, none of the airlines were able to determine the amount of money required and when it would be needed (Tr. 7197).

¶ Late in 1955 United completed a \$150 million financing program designed to cover its commitments for the 30 DC-8 jetcraft ordered late in 1955 together with related ground equipment and facilities. This financing was privately arranged because United did not have a sufficiently high potential rating to go to a public offering and was entirely a debt issue because in the words of United Air Lines: "This was not a matter of choice, for the ability of United, as well as the industry, to sell equity has been limited. That further increase in equity is necessary and desirable is apparent, but it is equally apparent that it cannot be accomplished satisfactorily until the present period of depressed earnings is brought to an end." (Loeb, Rhoades Report DX 270, Exhibit D, pp. 12-13, Exhibit U-2 in CAB Docket No. 8008).

The Debt Financing

TWA's claim for damages in respect of the defendants' interference with TWA's debt financing is founded upon paragraphs 24 through 28 inclusive and paragraph 52(c) and (d) of the complaint which are set forth below.

Paragraphs 24 through 28 of the complaint provide:

"24. From 1955 until December, 1960, the defendants used their power over the financing of aircraft thus obtained to compel TWA to acquire aircraft of the type and in the manner dictated by the defendants and used their power over TWA's acquisition of aircraft, obtained as hereinbefore alleged, to compel TWA to obtain financing for the acquisition of such aircraft of the type and in the manner dictated by the defendants.

"25. At least as early as 1955, the needs of United States air carriers for the extensive financing required for acquisition of jet-powered aircraft were recognized throughout the air carrier industry and by others, including the defendants.

"26. In 1955 and continuously thereafter until December, 1960, the defendants, pursuant to and in furtherance of their plan to control TWA in a manner advantageous to themselves, directed TWA to make no efforts itself to obtain financing necessary for the acquisition of jet-powered aircraft required for the needs of TWA.

"27. Commencing in the year 1955 and continuing thereafter, various other air carriers, including competitors of TWA, made appropriate arrangements for the financing of jet-powered aircraft. In 1955 and 1956 various United States air carriers were able to obtain funds at a cost (or interest rate per annum) in 1955 of 4%, and in 1956 at costs ranging from $4\frac{1}{4}\%$ to $4\frac{3}{4}\%$.

"28. In 1955 and thereafter for a period of several years, the defendants discussed with others various proposals for the financing of jet-powered aircraft, but the defendants did not make arrangements for such financing nor allow TWA to make such arrangements until December 1960, at which time the prevailing cost of funds (or interest rates) for debt financing was approximately $6-6\frac{1}{2}\%$."

Paragraph 52 of the complaint provides, *inter alia*:

"52. TWA has further been injured in the following manner:

.

"(c) TWA was foreclosed from obtaining financing on more advantageous terms than those available to it in December 1960 and thereby suffered a loss by virtue of the greater cost of borrowing it ultimately experienced.

"(d) TWA's ability to obtain financing for its needs was substantially impaired."

It is helpful to note particularly that the foregoing allegations, all of which are admitted by defendants' default, assert that (i) defendants dictated the type and manner of acquiring aircraft and manner of financing the acquisition (par. 24); (ii) United States air carriers recognized in early 1955 the need for extensive financing in order to acquire jet aircraft (par. 25); (iii) defendants directed TWA to make no efforts itself to obtain financing for the acquisition of jet aircraft (par. 26); (iv) various other air carriers, including TWA competitors, made arrangements for financing commencing in 1955, and in that year and in 1956, obtained commitments at interest rates ranging from 4% in 1955 to 4¼-4¾% in 1956 (par. 27); (v) defendants discussed various proposals for financing TWA jet requirements in 1955 and for several years thereafter made no arrangements for financing nor was TWA allowed to arrange financing until December 1960, when interest rates were approximately 6-6½% (par. 28); and (vi) TWA was foreclosed from obtaining advantageous interest rates and thereby suffered a loss (par. 52(c)).

The debt financing recommended by Drexel Harriman Ripley in their Report was summarized at pages 190-91 of this Report and is repeated herewith:

"(ii) A private placement long-term loan commitment with institutional investors in October 1955 for \$150 million minimum—\$170 million maximum at 4% interest.

"(iii) An underwritten non-preemptive offering in May 1959 of \$60 million of 5% subordinated debentures, convertible into common stock.

"(iv) A private placement long-term loan commitment with institutional investors in May 1959 for \$90 million minimum—\$110 million maximum at 6% interest." (Plaintiff's Brief, pp. 60-61)

On the basis of the allegations of the paragraphs of the complaint set forth above, TWA purported to establish damages before trebling in the amount of \$20.3 million, which was determined as follows:

"This separate claim is based upon the difference between:

"(i) The present value (*i.e.*, the present equivalent of the future burden) of future payments for debt service on TWA's long-term debt historically outstanding on December 31, 1963, and

"(ii) The present value (*i.e.*, the present equivalent of the future burden) of future payments for debt service on long-term debt for reconstructed TWA as of December 31, 1963 with a debt structure of the kind and in the amounts recommended by Drexel Harriman Ripley." (Plaintiff's Brief, p. 120)

The date of December 31, 1963 was selected for the purpose of calculating damages because according to TWA's

counsel that date permitted the simplest and most logical assumptions. As of December 31, 1963, the debt structures of Historical TWA and of Reconstructed TWA were comparable because (i) the jet fleet had been delivered and financing arranged, (ii) both Historical and Reconstructed TWA had outstanding long-term non-convertible and convertible debentures and the total amount of debt outstanding was comparable, and (iii) the shares outstanding of Historical and Reconstructed TWA as of December 31, 1963 were practically identical. If calculations had been made at a later date, additional assumptions would have been required to make adjustments for conversions of convertible debentures which occurred in respect of Historical TWA. (Plaintiff's Reply Brief, pp. 73-74)

October 1955 Debt Financing

Drexel Harriman Ripley Report and Morehouse Testimony

In forming their opinion with respect to debt financing in October 1955 and their recommendation that TWA should have and could have arranged mortgage loan commitments from institutional investors which would have provided over the next three years a minimum of \$150 million and a maximum of \$170 million, Drexel Harriman Ripley took the following approach:

(i) A pro forma balance sheet as of September 30, 1955 was prepared for Reconstructed TWA in which effect was given to the May 1955 sale of common stock providing net proceeds to TWA of \$55.5 million. (Drexel Harriman Ripley Report, TWA Ex. 5, Part II, pp. 23-25 and Exhibit thereto "Financials—7")

(ii) A capital expenditure program for Reconstructed TWA was projected by Price Waterhouse as of September 30, 1955, which indicated that Reconstructed TWA would require capital expenditures from the fourth quarter of 1955 through December 1960, aggregating \$375.3 million (Drexel Harriman Ripley Report, TWA Ex. 5, Part II, pp. 26-27 and Exhibit thereto "Financials—8")

(iii) A source of funds forecast from October 1955 to December 1960 for Reconstructed TWA as of September 1955 was prepared by Coverdale (Drexel Harriman Ripley Report, TWA Ex. 5, Part III, Volume 2 "Financials—9")

(iv) The balance sheets of Historical TWA and Reconstructed TWA as of September 30, 1955 were then compared with those of their three principal competitors, the balance sheets of American Airlines and United Air Lines as of September 30, 1955, and the balance sheet of Pan American Airways as of December 31, 1955.

In this comparison Historical TWA had a book net worth less than its three principal competitors by the following amounts: Pan American Airways \$40 million, American Airlines \$42 million, and United Air Lines \$29 million; whereas Reconstructed TWA would have shown a greater book net worth than its competitors by the following amounts: Pan American Airways \$15 million, American Airlines \$13 million, and United Air Lines \$26 million. Reconstructed TWA would have had no funded debt, showing 100% equity in its capital structure compared to 67.9% for Pan American Airways, 79.2% for American Airlines and 73.3% for United Air Lines; whereas Historical TWA would have had a ratio of 67.4% of equity to total capitalization. (Drexel Harriman Ripley Report, TWA Ex. 5, Part II, p. 25)

Drexel Harriman Ripley stated in their report that they would not have recommended short-term financing because funds required by TWA were very large and the returns on their investment in form of earnings were several years off. They would, therefore, have recommended that between July 1 and September 30, 1955, that TWA take corporate proceedings to authorize a flight equipment mortgage and in the fourth quarter of 1955 to arrange with institutional investors for a commitment to purchase flight equipment mortgage notes in the principal amount ranging between a minimum of \$150 million and a maximum of \$170 million, with an interest rate of 4% and a commitment fee of $\frac{1}{2}\%$ on the unused portion. (Drexel Harriman Ripley Report, TWA Ex. 5, Part II, p. 31) A summary of the principal provisions of the equipment mortgage and the October 1955 loan agreement are set forth in the Drexel Harriman Ripley Report, TWA Ex. 5, Part II, pp. 29-30, 32, 33.

Lastly, Drexel Harriman Ripley in their Report set forth a five year projection as it would have appeared in September 1955, showing as of December 31 for each of the years 1956-1960, inclusive, the outstanding equipment mortgage notes, their percentage of net tangible assets and the "Leeway" for the issuance of additional funded debt within the 60% voluntary action limit of funded debt to consolidated net tangible assets required by the mortgage. Drexel Harriman Ripley concluded that Reconstructed TWA could expect to be able to take down by 1959 the maximum of \$170 million available from the equipment mortgage financing while remaining comfortably within the 60% limitation.

Cross-examination of Morehouse

There is set forth below certain supplemental information developed in the defendants' extensive cross-examination of Morehouse of Drexel Harriman Ripley and certain exhibits admitted in evidence. As was the case earlier in this Report, the information set forth below is selected to illuminate the Drexel Harriman Ripley Report. However, I did not confine my consideration solely to the information listed below.

¶ In formulating the \$170 million debt financing in October 1955, Drexel Harriman Ripley made no assumption as to whether interest rates were going up or going down and took no advantage of hindsight in knowing that interest rates substantially increased over the five year period from the fall of 1955 to the end of 1960. (Tr. 3888-3889)

¶ The proposed debt financing of October 1955 assumed and was dependent upon the successful consummation of the May 1955 equity financing. Since in ordering aircraft equipment the lead time is in many cases so long, an airline need not necessarily arrange financing prior to entering into a contractual commitment for the equipment if it is satisfied that its credit standing and liquid capital give it a reasonable expectation that total financing is available. (Tr. 4038)

¶ It would not be proper for an airline to rely upon the credit standing of a parent holding 75% of its stock. (Tr. 4039)

¶ In planning the TWA May 1955 financing, Drexel Harriman Ripley would not have necessarily discussed with Equitable Life "rolling over" \$35 million of the equipment mortgage placed in December 1954 and would have men-

tioned possible additional financing in the fall of 1955 in general terms rather than specific terms. (Tr. 4250)

¶ In formulating its recommendations for October 1955 Drexel Harriman Ripley would have believed in the summer of 1955 that TWA in the fall of 1955 would have been negotiating with Boeing for 33 jet transports, of which 15 would be Boeing 707-131s and 18 Boeing 707-331s. (Tr. 4299-4300)

¶ Drexel Harriman Ripley assumed that TWA entered into the long-term financing arrangements on October 1, 1955 and that there would have been some negotiations with Boeing prior thereto. (Tr. 4300)

¶ Drexel Harriman Ripley's recommendations for October 1955 were not based on 20/20 hindsight even though the Capital Expenditure Projections prepared by Price Waterhouse admittedly used 20/20 hindsight. (Tr. 4335)

¶ While the general operating characteristics of jet aircraft were not known in September 1955, Drexel Harriman Ripley were of the opinion that a potential lender could have been satisfied with reasonable forecasts based on the known general operating characteristics. (Tr. 4338)

¶ Coverdale projected TWA revenue income to be greater than the actual results of operations of Historical TWA which showed a loss. On the basis of historical results TWA would not have been able to take down the amounts of money projected by Drexel Harriman Ripley under the 1955 mortgage equipment loan because of the provision of the mortgage limiting funded debt to 60%. (The limitation of debt to 60% of consolidated net tangible assets.) (Tr. 4351)

***The Loeb, Rhoades Report and
Woodfin Testimony Relating to the
October 1955 Debt Financing***

The Loeb, Rhoades Report disagreed with the Drexel Harriman Ripley opinion that TWA could and should have made arrangements in October 1955 to borrow between \$150 million and \$170 million from institutional lenders. Loeb, Rhoades stressed that the Drexel Harriman Ripley Report and testimony of Morehouse recommending the October 1955 debt financing assumed and was dependent upon the successful consummation of the equity financing in May 1955 producing net proceeds of \$55.5 million. (Loeb, Rhoades Report, DX 270, Part II, p. 28)

Loeb, Rhoades proceeds to state that in its opinion even if the October 1955 financing was not dependent upon the May 1955 equity financing, it could not have been successfully arranged. The Loeb, Rhoades Report states their opinion as follows:

"In assessing the likelihood of success for Mr. Morehouse's projected \$150-170 million flight equipment mortgage loan of October 1, 1955, we think it relevant to consider the following:

(i) By October 1, 1955 no jets had been ordered by any airlines;

(ii) By October 1, 1955 none of the airlines had arranged any financing (debt or equity) for the purchase of jet aircraft; (Exhibit A)*

* The debt financings referred to by Morehouse on page 32 of his Report (see also Financials—13) were arranged on the following dates: Pan American May 10, 1955; Northwest June 30, 1955; Eastern October 31, 1955; American, November 1, 1955 and United December 21, 1955. However, the earlier Pan American and Northwest financings were for the purpose of acquiring the latest series of pistons ordered. (Exhibit A).

(iii) The maximum \$170 million mortgage commitment which Mr. Morehouse assumes TWA could have obtained substantially exceeds the long-term commitments obtained by any other airline in 1955.** The large commitments obtained by United, Eastern and American later in the Fall of 1955 were the largest in the history of the airline industry. Indeed, a \$150.170 million loan to TWA on October 1, 1955, would have been almost three times as large as any long-term commitment that had been made to that date to any airline for any purpose, and would have exceeded the commitments to the other airlines by a minimum of \$30.50 million. (Exhibit A).

(iv) Detailed projections with respect to the Boeing 707-331s and the Convair 880s could not have been prepared as of October 1, 1955. Lending institutions, such as life insurance companies did not make commitments of the size envisaged by Mr. Morehouse without making a comprehensive analysis of the planned use of the funds. Jet aircraft were an unknown and untested commodity in the Fall of 1955. Any insurance company asked to lend large sums of money for such a purchase during this period would have demanded detailed information as to the type and size of the fleet, cost, terms of payment, delivery dates, earning power, depreciation, planned usage, configuration and the like.

We are advised by counsel that we may assume, based upon the record in the case to date, that the intercontinental Boeing, the 707-320 series, was not ordered by any airline until December, 1955 and that detailed information on that aircraft such as described

** American obtained \$75 million; Eastern obtained \$90 million; and United obtained \$120 million of long-term debt. Financing done by other airlines during this period was for much smaller amounts. (Exhibit A).

above was not available to the airlines until some time after October 1, 1955. We do not believe that funds could have been borrowed for the acquisition of this aircraft until detailed projections containing information relating to cost, terms, delivery, earning power and the like could have been made available to prospective lenders. We note that such detailed projections, although hypothetical, were in fact included as a part of Mr. Morehouse's Report (Financials—8, 9 and 10) but that his projections were based upon information apparently not yet available to the industry. We also note that detailed projections which United in fact used in order to obtain its loan commitment in December 1955. (Defendants' Exhibit 197 in evidence.)

Moreover, Mr. Morehouse assumed that TWA's proposed borrowing on October 1, 1955 would have included a \$25 million projected down payment for medium/long-range airplanes not yet selected. As to the last item, it is our opinion that a commitment of this size could not have been obtained as of October 1, 1955 to buy an unspecified number of unselected airplanes which had not yet been developed or identified.

(v) Although not disclosed by Mr. Morehouse's exhibits, TWA's earnings, as compared to 1954, began to fall in the second quarter of 1955 and dropped sharply in the third and fourth quarters. (Exhibit F)." (Loeb, Rhoades Report, DX 270, Part II, pp. 29-31)

In conclusion the Loeb, Rhoades Report stated an opinion with respect to the October 1955 debt financing as follows:

"In view of the above, and even assuming, contrary to our view, that the proposed 1955 equity financing had been accomplished, it is our opinion that TWA would not have and could not have obtained a commitment for \$150-170 million on October 1, 1955." (Loeb, Rhoades Report, DX 270, Part II, pp. 31-32)

It is noted that Loeb, Rhoades emphasizes that prior to October 1, 1955 none of the airlines had arranged any financings (Debt or Equity) for the purchase of jet aircraft and that the \$60 million financing of Pan American and the \$29.5 million financing of Northwest arranged on May 10, 1955 and June 30, 1955, respectively, were in each case to finance the acquisition of piston planes, not jets, and in the case of Pan American also for working capital. The first financing specifically concerned with the acquisition of jets was the Eastern Air Lines financing arranged on October 31, 1955 amounting to \$90 million of which \$40 million was earmarked for future jet orders. The first financing earmarked solely for acquisition of jets was the American Airlines financing of \$75 million effected November 1, 1955 and the United Air Lines financing of \$150 million effected December 21, 1955, of which \$30 million was arranged with thirty-eight banks and \$120 million with insurance companies.

Cross-examination of Woodfin

There is set forth below certain supplemental information developed in TWA's extensive cross-examination of Woodfin and certain exhibits admitted in evidence. As was the case earlier in this Report, the information set forth below is selected to illuminate the Loeb, Rhoades Report. However, I did not confine my consideration solely to the information listed below.

¶ The United Air Lines Annual Report for the calendar year 1955 stated in referring to a financing program arranged in December 1955:

"The largest single financing program in the history of the airline industry was completed by United in December as part of its long-range preparation for

jetliner operations. Included were arrangements for a maximum of \$150,000,000 in new capital, to be available over the next five years. Of that amount, \$120,000,000 may be realized from the sale of new debentures and up to \$30,000,000 may be borrowed under a new bank credit agreement. No equity financing is involved.

"Series D, 4 per cent sinking fund debentures will be sold as funds required from February 1, 1956 through March 1, 1959, to the Metropolitan Life Insurance Company, The Prudential Insurance Company of America and The Mutual Life Insurance Company of New York. . . .

"The new credit agreement is with a group of 38 banks headed by The First National City Bank of New York. Replacing an earlier agreement dated March 1, 1955, it makes loans available through December 31, 1960, with repayment over a five-year term thereafter." (TWA Ex. 180, p. 6, Tr. 7084)

¶ Most of the airline financing from 1946 to the 1955 period was with banks, mostly five year money. (Pan American in October 1946 had a \$40 million credit agreement with the National City Bank.) Only Pan American, United and TWA had placed any long-term money with institutions. (Tr. 7182-7183)

¶ Prior to October 31, 1955, when Eastern Air Lines arranged a \$90 million financing with Equitable Life Assurance Company, of which \$40 million was to finance jet acquisitions, there had been only the following long-term financings arranged with insurance companies: (i) a \$60 million financing of Pan American Airways arranged on May 10, 1955 with a group of several insurance companies, (ii) the \$40 million financing arranged by TWA with Equitable Life Assurance Company to replace a 1953 bank

credit and to purchase 20 Lockheed 1049-Gs, and (iii) three financings of United Air Lines arranged with Metropolitan Life and MONY, a \$12 million financing in 1947, a \$10 million financing in March 1952, and a \$20 million financing in July 1954, the last two of which were stated to be for general purposes. (DX 270—Exhibit A—pp. 2, 4, 5 and 6, Tr. 7250-7251)

¶ On October 25, 1955, the Board of United approved the purchase of 30 Douglas DC-8's at a total cost of \$175,000,000; on October 14, 1955, Pan American Airways ordered 25 Boeing jets and 20 Douglas jets; and in November, 1955 American Airlines ordered 30 jets (Tr. 7382-7383).

¶ An agreement in principle is reached between the lender and the borrower some time before the execution of the formal written documents evidencing the loan commitment. (Tr. 7388)

¶ In October 1955, after giving effect to the \$55.5 million May 1955 equity financing and the \$170 million October 1955 debt financing, TWA on a pro-forma basis had a more favorable ratio of debt to total capitalization (57%) than did United Air Lines which had a ratio of 61%. But it is doubtful that TWA could have raised more long-term money than United Air Lines. Long-term lenders would be interested in earnings as well as amount of equity and TWA was not doing well in the latter part of 1955. (Tr. 7409-7410)

¶ In Woodfin's opinion it would have been a mistake to terminate in May 1955 the \$40 million financing arranged by TWA with Equitable Life in December 1954. Institutional lenders do not like to have recently completed financings terminated even if Equitable Life had been will-

ing to "roll over" the \$40 million financing. Woodfin doubts that Equitable together with other insurance companies would have been willing to participate in an additional \$150-170 million financing in October 1955 as recommended by Drexel Harriman Ripley. Such a financing involved a larger commitment than a group of large insurance companies gave subsequently to TWA's three principal competitors. Woodfin would hold this opinion whether or not TWA had effected the \$55.5 million equity financing in May 1955. Only a relatively few number of large life insurance companies were participating in airline financing in 1955. (Tr. 7250-7255)

The May 1959 Debt Financings

Drexel Harriman Ripley recommended that Reconstructed TWA in May 1959 make (i) an underwritten non-preemptive offering of \$60 million 5% Convertible Subordinated Debentures and (ii) a private placement with institutional investors of a long-term loan commitment ranging from \$90 million to \$110 million and bearing interest at 6%.

In formulating their recommendation, Drexel Harriman Ripley first considered the reconstructed situation of TWA in September 1956, again for the period from 1957 through mid-1958 and lastly in 1959.

As of September 30, 1956

It was assumed that TWA had placed orders in September 1956 for 30 Convair 880 jet aircraft for delivery in 1960 at a total price of \$157,900,000 and that a down payment of \$26,300,000 was made at the time the orders were placed with substantially no further payments required until the third quarter of 1959, the funds for the down

payment being obtained from a takedown on July 1, 1956 of \$50 million of the Series A Mortgage Notes arranged for by Reconstructed TWA in October 1955.

The report proceeded to examine the financial posture of TWA as of September 1956 in the light of its then projected capital expenditure program and considered what, if any, financing arrangements might have been indicated in September 1956.

Drexel Harriman Ripley considered TWA's reconstructed operating results during the first nine months of 1956, which showed a loss of \$500,000 and internal cash generation of \$17.5 million and noted that by September 1956 Reconstructed TWA was running well behind the Coverdale forecast of funds generated prepared as of September 1955. They also considered (i) a reconstructed balance sheet as of September 30, 1956, which gave effect to the receipt of \$55.5 million net proceeds of sale of common stock in May 1955 and the takedown of \$100 million under the October 1955 debt financing, (ii) TWA's capital expenditure program projected by Price Waterhouse as of September 30, 1956, and (iii) the projection of TWA money requirements as of September 30, 1956, which indicated a peak requirement by the 1960 third quarter of \$233.5 million, which was \$163.5 million in excess of the \$70 million remaining available out of the \$170 million 1955 mortgage commitment.

Drexel Harriman Ripley concluded as follows:

"In summary, then, TWA's financial posture at September 30, 1956 was about as follows: It had experienced sizable operating losses during the nine-month period then ended, and C&C was forecasting further losses in 1957. TWA had a projected peak requirement for \$163.5 million in new outside funds (over and above what had been provided for in the 1955 mortgage financing) and it appeared that some form of junior

security would have to be included in the financing of this requirement. But the new money did not appear to be needed before the first quarter of 1959, almost 2½ years hence.

We conclude that under the circumstances prevailing in September 1956 we would have recommended to TWA that it not attempt, at that time, to formalize further financing arrangements even though all indications were that it would have to do so later. We believe that TWA would have held conversations with its major institutional lenders to advise them of the enlargement of its projected money requirements, indicating (a) that it would be approaching them at a later date to discuss further borrowing arrangements, and (b) that it recognized the indicated need for junior financing prior to or in conjunction therewith.

It would not have been practical, in September 1956, to attempt to pinpoint a target date for a financing two years or so away. We believe that it would have been logical to plan in terms of a financing sometime in the latter part of 1958 or early in 1959. However, since the junior financing would doubtless involve the sale of common stock, either directly or through the use of a convertible security or warrants, we believe that TWA and we, as their investment bankers, would have been keeping a weather eye on the market for airline securities with a view toward a possible earlier financing should stock market conditions permit." (Drexel Harriman Ripley Report, TWA Ex. 5, Part II, p. 38)

1957 Through Mid-1958

Drexel Harriman Ripley then proceeded to consider the reconstructed TWA situation in 1957 through mid-1958. They assumed that the \$70 million remaining balance of the \$170 million financing arranged in October 1955 had been taken down, \$50 million on April 1, 1957 and \$20 million on January 1, 1958, and that Reconstructed TWA had the same aircraft leases as Historical TWA. They noted

that reconstructed generation of funds from internal sources for the twelve months ended September 30, 1957 exceeded by \$13.9 million the forecast made by Coverdale in September 1956, but that in the last quarter of 1957 internal cash flow on a reconstructed basis was \$4.8 million lower than the forecast for that quarter and that cash flow continued to lag behind the forecast for the next two quarters so that the accumulated lag in cash flow for the period from September 30, 1956 to June 30, 1958 was \$3.5 million. On instructions from TWA's counsel, Drexel Harriman Ripley assumed that in the fourth quarter of 1957 TWA made a commitment to acquire four L1649A piston aircraft and four L1049H piston aircraft, although the expenditures for these eight piston aircraft were not included in the Price Waterhouse Projection of Capital Expenditures made as of September 1955 and September 1956. The net cash expenditures by TWA for these eight aircraft totalled \$17.3 million and were to be made in the last quarter of 1957 and the first three quarters of 1958, and Drexel Harriman Ripley assumed that these acquisitions would be financed by the takedown on January 1, 1958 of the last \$20 million available under the October 1955 financing. (Drexel Harriman Ripley Report, TWA Ex. 5, Part II, pp. 39-40)

On the basis of the foregoing considerations, Drexel Harriman Ripley in their report made the following comments with respect to the situation in mid-1958:

"As a result of the foregoing factors, TWA would have been aware, by mid-1958, that funds required from outside sources to meet projected capital expenditures would be larger than indicated by the September 1956 projection. Timing of the money requirement had not changed, however. It appeared that the airline should be able to meet its scheduled progress

payments on the jets, and its other capital requirements, without obtaining new funds from outside sources until the spring or summer of 1959.

TWA, however, was on 'thin ice' with respect to the funded debt restrictions of the Flight Equipment Mortgage. Exhibit: Financials—27 indicates that throughout the first half of 1958 TWA's reconstructed funded debt as a percentage of net tangible assets would have hovered right around the 60% figure set forth in the voluntary action covenant of the funded debt limitation. It did not appear that there was any immediate danger of reaching the 65% default level." (Drexel Harriman Ripley Report, TWA Ex. 5, Part II, p. 41)

Operating under these considerations Drexel Harriman Ripley stated that TWA probably would have given thought to doing some junior financing in 1958 in order to provide some additional "cushion" beneath its outstanding funded debt and thereby avoid the possibility of default under the 65% provision of the outstanding Flight Equipment Mortgage. (Drexel Harriman Ripley Report, TWA Ex. 5, Part II, p. 43)

After comparing the market prices of TWA stock with Standard & Poor's Index of Air Transport Stocks as well as the AIMV (Aggregate Indicated Market Value) and the book value of TWA shares and noting the decline of TWA common from a mid-1955 high of 31 $\frac{5}{8}$ to 12 $\frac{3}{4}$ in March 1958, when the historical book value per share was \$15.09, and after also considering published comments on airline stocks of Moody's Stock Survey, Drexel Harriman Ripley commented as follows:

"So, throughout the first half of 1958 TWA's shares, and the shares of its principal competitors, were selling at prices only slightly recovered from their then recent lows. But the market generally seemed to be expecting an improved performance from airline shares

during the forthcoming months. Since TWA's period of outside money need still appeared to be at least twelve months away, we believe that we would have recommended that TWA adhere to its plans for a financing in 1959 rather than attempt to accelerate part of the program. It appeared to be a good business risk that market conditions for an equity offering by TWA (which would clearly be the cornerstone of the financing) would be better by mid-1959 than they were in mid-1958.

Thus, commencing in the summer of 1958, we believe that TWA, in consultation with its lawyers, accountants, investment bankers, institutional lenders, etc., would have been engaged in the task of designing and preparing for a major financing, in the spring or summer of 1959, involving the sale of both senior and junior securities." (Drexel Harriman Ripley Report, TWA Ex. 5, Part II, p. 43)

Early 1959

In preparing for the major financing in the spring or summer of 1959, Drexel Harriman Ripley considered various earnings and other data relating to TWA and its principal competitors including a tabulation of TWA operations, both historically and reconstructed, year by year, 1954-1958, compared with its three main competitors. Drexel Harriman Ripley observed that the operating results of all four airlines during the five year period showed the effects of the high cost of preparation for the introduction of jet equipment, but noted that TWA, with losses from operations in three out of the five years, turned in by far the poorest performance of the four airlines. The report then turned to consideration of a more detailed income account for Reconstructed TWA for the five years 1954-1958, inclusive, and set forth brief summaries of TWA news releases commenting on revenues and operat-

ing results put out on April 1, 1959 and April 23, 1959. Consideration was also given to a summary of items appearing in the current section of Moody's Transportation Manual from January 1, 1959 to June 30, 1959, relating to the CAB monthly earnings reports of TWA and its competitors and also the earnings reports of TWA and its competitors for the year ended December 31, 1958 and interim reports, which in each case were compared with the similar period a year earlier. (Drexel Harriman Ripley Report, TWA Ex. 5, Part II, pp. 47-52)

Having considered operating figures of TWA and its three principal competitors as summarized above, the report then turned to a consideration of the general stock market situation and the market quotations for the common stocks of TWA and its three principal competitors. It noted that the stock market in general was strong and advancing through 1958 and the first half of 1959, referring to the Dow Jones Industrial Average during that period, which indicated a percent advance over the 18 month period ranging from a high of 43% to a low of 41% and for the six month period ended June 30, 1959 ranging from a high of 8% to a low of 6%. (Drexel Harriman Ripley Report, TWA Ex. 5, Part II, p. 53)

In commenting upon the market quotations for the common stock of TWA's competitors, the Report noted that over the 18 months ended June 1959, the stocks of TWA's main competitors advanced in greater amounts percentage-wise than the Dow Jones Industrials. With respect to the market for the TWA common stock, the Report commented:

"TWA, although operating at a loss in the first quarter of 1959, was sharply reducing its loss in that quarter as compared with the corresponding quarter of 1958. TWA stock advanced strongly in price during the first half of 1959, in fact, more than double that of the Standard & Poor's Index of Air Transport

Stocks. And it was selling well over its book value." (Drexel Harriman Ripley Report, TWA Ex. 5, Part II, p. 54)

A comparative tabulation showing volume, price per share and approximate dollar volume of trading in TWA common stock for the entire year 1958 and the first six months of 1959 was then set forth, and also a tabulation giving a comparison of the market prices of TWA stock with its historical book value at year-end over the five year period preceding 1959 and at the middle of 1959.

The Report commented upon the price-earnings ratios of TWA and its three principal competitors as follows:

"Translating the foregoing figures into price/earnings ratios (P/E), and using the Standard & Poor's figures of earnings per share, brings the following results:

	Price/Earnings Ratios—Times			
	TWA	PAA	AAL	UAL
Five-Year Average				
1954-1958	30.8	19.6	15.8	10.9
Three-Year Average				
1956-1958	—	20.7	15.9	10.7

Note: Prices taken at average market price—April, May, June 1959.
Using the AAL figures including the 'special credit' for 1954, the ratio for the five-year average 1954-1958 becomes 15.1 times (instead of 15.8 times).

It will be noted that TWA shows no figure for the P/E ratio for the three-year period 1956-1958, the reason being that TWA operated at a loss in each of the three years. Its three main competitors operated profitably in each of the five years 1954-1958. Nevertheless, as stated hereinbefore, TWA stock was strong in the market in early 1959, doubtless because of anticipated future operating profits." (Drexel Harriman Ripley Report, TWA Ex. 5, Part II, p. 56)

The Report then noted that Standard & Poor's was advising investors to hold TWA, buy Pan American and American Airlines, and hold United Air Lines. It then noted that Moody's Stock Survey published a relatively bullish article on the subject of airline stocks in the spring of 1959 and that both Moody's and Standard & Poor's were emphasizing the importance of the coming jet airplanes.

Again the report reconstructed the TWA situation in March 1959 resorting to a reconstructed balance sheet, a capital expenditure program as projected by Price Waterhouse as of March 1959, and a projection of money requirements as of March 1959, noting that the latter projection indicated a peak money requirement by the 1960 third quarter of \$160.7 million.

Lastly the Report, in coming to its recommendations as to the 1959 debt financing, noted that (i) as of March 31, 1959, reconstructed funded debt as a percentage of net tangible assets was 59.1%, (ii) as of that date not more than \$100 million could have been raised by the issuance of additional equipment mortgage notes, assuming a total financing of \$160 million, and (iii) all of the new money would not be required by TWA until the third quarter of 1960, by which time TWA's net tangible asset position should improve through retention of forecast earnings.

The Report stated its recommendation as follows:

"Under the above circumstances, we believe that we would have recommended junior financing in the amount of \$60 million. Subject to the sale of \$60 million of junior securities, we believe that TWA could have obtained commitments from institutional investors for the private purchase of Series B Flight Equipment Mortgage Notes to provide, over the next two years, a minimum of \$90 million and a maximum of \$110 million." (Drexel Harriman Ripley Report, TWA Ex. 5, Part II, p. 61)

The Report then turned to specific consideration of the essential terms for the junior financing and the senior debt financing.

Junior Debt of \$60 Million

Drexel Harriman Ripley ruled out issuing common stock because of the poor earnings record of TWA and also excluded the issuance of a straight or convertible preferred because the dividends would not be deductible for tax purposes by TWA. The Report concluded that convertible subordinated debentures should be publicly offered in May 1959 and that the offering should be underwritten rather than making a preemptive offering to stockholders.

It was Drexel Harriman Ripley's opinion that the conversion rate should be "right on" or very close to the market at the time of offering. As the announcement of a proposed offering of convertible subordinated debentures of the magnitude contemplated frequently has a depressing effect on the market, Drexel Harriman Ripley in arriving at the conversion price of \$18.50 per share discounted by 15% the mid-May 1959 market price of \$21.75 per share (first concluding, based on a consideration of the historical and reconstructed earnings of TWA that a reconstructed market value would have been approximately the same as the historical value). (Drexel Harriman Ripley Report, TWA Ex. 5, Part II, p. 66)

An interest rate of 5% was recommended, which was the same rate being paid on similar issues by American Airlines and Eastern Air Lines and slightly above a 4% rate being paid by Pan American Airways and a 4¾% rate being paid by KLM.

An outline of the specific terms of the proposed subordinated debentures is set forth on pages 68 and 69 of the Drexel Harriman Ripley Report.

Senior Debt Financing

Drexel Harriman Ripley were of the opinion that TWA could and should have obtained in May 1959 from institutional investors commitments to purchase from \$90 million to \$110 million Flight Equipment Mortgage Notes subject to the prior sale of \$60 million convertible subordinated debentures, the funds to be taken down over a period ending December 31, 1960.

The recommended interest rate was 6%, which was admittedly higher than the interest rate on current unsecured borrowings of its principal competitors, Pan American Airways, American Airlines and United Air Lines. Only Delta and Northwest Airlines were paying a 6% rate on their senior debt. (Drexel Harriman Ripley Report, TWA Ex. 5, Part II, p. 70)

It is important to note, and the Drexel Harriman Ripley Report acknowledges, that Reconstructed TWA, giving effect to the May 1959 financings, would have had a higher debt ratio and lower earnings and cash flow coverages than the other six trunk airlines, except that TWA's cash flow would have exceeded that of Pan American Airways and Delta. However, as a counter-consideration, Drexel Harriman Ripley in their Report cited as favorable factors for TWA (i) a "strong forecast of earning power" arising from ownership by December 1960 of a jet fleet which would have equalled or surpassed the fleets of each of its three main competitors, (ii) a strong mortgage security for its senior debt as compared with the other airlines whose debts were unsecured, and (iii) a higher interest rate except for Delta and Northwest. (Drexel Harriman Ripley Report, TWA Ex. 5, Part II, pp. 70-71)

The terms of the loan agreement pursuant to which the mortgage equipment notes would be issued are set forth on page 71 of the Drexel Harriman Ripley Report.

Lastly, the Report compared the balance sheets of Historical and Reconstructed TWA with those of Pan American Airways, American Airlines and United Air Lines, and also compared the historical and reconstructed capital structure of TWA as of December 31, 1960, which indicated that Reconstructed TWA would have had a total funded debt of \$320,180,000, of which \$260,180,000 was senior, compared to the historical total funded debt of \$223,242,000, of which \$123,242,000 was senior. (Drexel Harriman Ripley Report, TWA Ex. 5, Part II, p. 74)

The Loeb, Rhoades Report Relating to the May 1959 Debt Financing

Loeb, Rhoades in their Report stated that notwithstanding their conviction that neither the May 1955 equity nor the October 1955 debt financing recommended by Drexel Harriman Ripley could have been accomplished, they would assume that for the purpose of commenting on the proposed 1959 financing, the 1955 financings as recommended by Drexel Harriman Ripley had been accomplished. Their Report noted that the proposed convertible debentures financing of \$60 million substantially exceeded any equity financing done by Pan American, American, Eastern or United during the 1955-1960 period, mentioning that Eastern sold \$25 million of convertible subordinated notes on October 21, 1958, American sold \$40 million of convertible subordinated debentures on June 18, 1959, Pan American sold \$46.97 million of convertible subordinated debentures on July 29, 1959 and United sold \$25 million of convertible subordinated debentures on November 30, 1960. In view of these circumstances and the fact that the reconstructed earnings of TWA during the years 1956, 1957 and 1958 were disappointing, Loeb, Rhoades questioned that the

offering would have been doable. Further, Loeb, Rhoades found it difficult to believe that it would have been possible to have had two equity financings—one in 1955 and one in 1959—and catch the market each time at or near its high over a thirteen-year period. (Loeb, Rhoades Report, DX 270, Part II, p. 33).

Turning to the proposed private placement of \$90 million to \$110 million of 6% mortgage notes in May 1959, Loeb, Rhoades expressed doubt that an institutional investor would have been willing to enter into the commitment again in light of the poor earnings and cash flow coverages as well as the high senior debt ratio of 60.7% indicated for the first quarter of 1960 on page 70 of the Drexel Harriman Ripley Report. In commenting on the schedule, Loeb, Rhoades stated:

“(c) The May 1959 \$90-110 Million Loan Commitment

With respect to the private placement of \$90-110 million of 6% mortgage notes in May 1959, we doubt that an institutional investor would have been willing to enter into the commitment in light of the poor earnings and cash flow coverages and the high senior debt ratio of 60.7% shown for reconstructed TWA in Mr. Morehouse's schedule at page 70. According to the schedule, on a pro forma basis reconstructed TWA had earned an average over five years (1954-1958) of only half of the interest that would have been payable had the total reconstructed senior debt of \$280 million been outstanding. The 12 months ended March 31, 1959 were not much better than the five year average, as only 70% of the interest had been earned. None of these figures would seem to justify an institutional lender making an additional \$90-110 million senior debt investment in reconstructed TWA.

Based upon our dealings with insurance companies in arranging financing for our clients, we know that all

insurance companies, including the major lenders, are regulated in their investments by state laws, which prevent the lenders from acquiring obligations which are predominantly speculative in character.

We note that Mr. Morehouse speculated as to the quality of both his proposed October 1955 mortgage obligations and his \$60 million May 1959 convertible subordinated debentures. In Mr. Morehouse's opinion the institutional investors would have viewed the October 1955 obligations as 'not quite up to Baa quality' (page 31). As to the May, 1959 convertible subordinated debenture issue, he states that it 'might have been rated no higher than B'.* (page 68). However, he gives no clue as to a possible rating for the \$90-110 million May 1959 mortgage notes. It is our opinion that the May 1959 mortgage notes would have been considered at best of B quality, and thus might well have presented to institutional lenders a question as to whether such an investment would have complied with applicable state laws. (Loeb, Rhoades Report, DX 270, Part II, pp. 33-35)

* Although DHR Exhibit: General 1 defines Baa and Ba ratings, no definition of a B rating is given. Moody's defines a B rating as follows: 'Bonds which are rated B generally lack characteristics of the desirable investment. Assurance of interest and principal payments or of maintenance of other terms of the contract over any long period of time may be small.'

The Loeb, Rhoades Report then turns to a consideration of the reconstructed capital requirements of TWA from October 1, 1955 through December 31, 1960 appearing in the Drexel Harriman Ripley Report as Exhibit: Financials—31, which showed a total requirement of \$544.8 million to cover the cost of the 63 jet planes originally ordered by Toolco for TWA, as well as the cost of the piston acquisitions TWA historically incurred. Apart from funds generated from operations assumed on a reconstructed basis, TWA would have been faced with raising in excess of

\$300 million of new money to carry out the hypothetically reconstructed capital requirement program in the period from October 1, 1955 through December 31, 1960. Loeb, Rhoades concludes that in view of the diminishing reconstructed earnings in 1955 and the losses incurred in 1956, 1957 and 1958, TWA could not independently have raised \$300 million on reasonable terms.

After listing on page 36 of their Report the financial aid given TWA historically by Toolco in the 1955-1960 period which assisted TWA historically in acquiring 47 jet planes and various piston planes, Loeb, Rhoades states as its opinion that TWA could not have independently financed the capital requirements of the hypothetical program which were even greater than that met historically by TWA with Toolco's assistance. In conclusion, Loeb, Rhoades reverts to the May 1955 equity financing of \$58.4 million recommended by Drexel Harriman Ripley as the cornerstone of its program and repeats its opinion that the equity financing could not have been completed without Toolco's participation and that without Toolco, no prudent and competent management without the benefit of hindsight would have adopted such a program.

Cross-examination of Witnesses on 1959 Debt Financing

The cross-examination of the expert witnesses as to that portion of their respective reports relating to the 1959 debt financing was not as extensive as the cross-examination devoted to the May 1955 equity financing and the October 1955 debt financing, possibly because their direct testimony as embodied in their respective reports was especially detailed and explicit. No supplemental information developed on cross-examination addressed to the May 1959 debt financings needs to be noted herein.

Determination of Damages Related to Financing

I find that those paragraphs of the complaint that form the basis of TWA's claim for damages related to financing, specifically paragraphs 7(f), 10(g), paragraphs 23 through 28 inclusive and paragraph 52(c) and (d) are "well pleaded" and in considering and determining the damages claimed by TWA, I accept these allegations as proved.

It may be helpful once again to restate below in summary form the essence of these allegations as follows:

1. For the purpose of creating and maintaining control of the business of financing the purchase of aircraft for use by TWA and strengthening control over the acquisition of aircraft by TWA, the defendants rendered TWA dependent upon them for such assistance in financing as defendants might choose to provide, refusing to allow equity financing by TWA except on condition that as a result Toolco would increase its equity position in TWA and causing TWA instead to obtain funds chiefly by means of debt financing, thus rendering TWA unable to seek financing needed for the acquisition of aircraft except upon the approval of defendants. The actions complained of commenced subsequent to the acquisition by Toolco of a stock interest in TWA and the action continued throughout the period covered by the complaint. (Par. 23).*

2. From 1955 until December 1960 defendants dictated the type and manner of acquiring aircraft and the manner of financing the acquisition of aircraft. (Par. 24).

3. At least as early as 1955 United States air carriers recognized the needs for the extensive financing required for the acquisition of jet powered aircraft. (Par. 25).

* Toolco first acquired stock of TWA in 1939 (6 CAB 153, 154) and continued its actions until December 31, 1960.

4. In 1955 and continuously thereafter until December 1960 defendants directed TWA to make no efforts itself to obtain financing necessary for the acquisition of jets required for TWA needs. (Par. 26).

5. Commencing in 1955 and continuing thereafter various other air carriers, including TWA competitors, made appropriate arrangements for the financing of jet aircraft, and in 1955 and in 1956 obtained commitments for funds at interest rates ranging from 4% in 1955 to $4\frac{1}{4}\%$ - $4\frac{3}{4}\%$ in 1956. (Par. 27).

6. In 1955, and for several years thereafter defendants discussed various proposals for financing TWA jet aircraft, but made no arrangements for such financing, nor was TWA allowed to make any such arrangements until December 1960, when interest rates for long-term debt were approximately $6-6\frac{1}{2}\%$ (Par. 28); and

7. TWA was foreclosed from obtaining financing on more advantageous terms than those available to it in December 1960 and thereby suffered a loss because of the greater cost of borrowing and TWA's ability to obtain financing for its needs was substantially impaired. (Par. 52(c) and (d)).

The well pleaded allegations restated above, which are accepted as facts, lead to the determination that with one important exception noted below, the existence of Toolco, its ownership of stock and the role played by it historically in making or guaranteeing loans to TWA or in buying TWA equity all must be ignored in considering and determining damages to TWA attributable to the foregoing allegations of the complaint. To give weight to the existence of Toolco, its TWA stock ownership and the role played by it in TWA financial affairs would be in deroga-

tion of the allegations and not permissible as I interpret the doctrine of *Thomas v. Wooster* (114 U. S. 104) discussed on pages 21 through 24 of this Report. Notwithstanding this exclusion, I must consider the actual Balance Sheet as of December 31, 1954 and the actual operating results for the year 1954 and the first two calendar quarters of 1955, as did TWA and its experts Drexel Harriman Ripley, and as must have an independent Board.

Proof of Damages. TWA in submitting its proof of damages has endeavored to establish through the expert testimony of Drexel Harriman Ripley what it would have recommended to TWA in the early part of 1955, in October 1955 and in May 1959. Further through the expert testimony of Drexel Harriman Ripley and through cross-examination of Woodfin, a general partner of Loeb, Rhoades, the expert retained by the defendants, TWA has endeavored to establish that if the Board of TWA in early 1955 and continuously thereafter had been composed of directors acting prudently, independently and free from any control or dominance by Toolco or any other major stockholder, it would have approved and could have carried out the recommendations of Drexel Harriman Ripley.

TWA and its expert, Drexel Harriman Ripley, state quite clearly and repeatedly that the debt financings recommended in October 1955 and May 1959 assumed and were conditioned upon the sale in May 1955 of common stock bringing net proceeds to TWA of \$55.5 million (Drexel Harriman Ripley Report, TWA Ex. 5, Part II, pp. 23-25; Tr. 3981, 4313-4314). The recommendations with respect to the May 1959 sale of \$60 million convertible debentures and the placing of \$90-\$110 million equipment mortgage notes assumed and were additionally conditioned upon the successful placing in October 1955 of a \$150-\$170 mil-

lion equipment mortgage (Drexel Harriman Ripley Report, TWA Ex. 5, Part II, p. 58).

It is, therefore, understandable why TWA, its expert and counsel devoted a substantial amount of attention to the prudence and doability of the May 1955 equity financing and why the defendants, their expert and counsel similarly addressed an equivalent amount of attention to proving that the May equity financing was imprudent, premature and not doable.

No alternative theory of damage was presented by TWA or the defendants and I must, therefore, address myself to TWA's contention that an independent and prudent Board of TWA could and should have sold in May 1955, \$58.5 million of common stock of TWA which would bring net proceeds to TWA of \$55.5 million.

In the receiving and hearing of evidence on damages I have been guided by the principle of *Bigelow v. RKO Radio Pictures, Inc.*, 327 U. S. 251 (1946). The Supreme Court in *Bigelow* stated that "the most elementary conceptions of justice and public policy require that the wrongdoers shall bear the risk of the uncertainty which his own wrong has created." (327 U. S. 251, 265). However, the Court defined the responsibilities of the trier of fact in the following language at page 264:

"In such a case, even where the defendant by his own wrong has prevented a more precise computation, the jury may not render a verdict based on speculation or guesswork. But the jury may make a just and reasonable estimate of the damage based on relevant data, and render its verdict accordingly."

I recognize that with respect to participation in the financing of commercial airline companies and aircraft manufacturing companies, Drexel Harriman Ripley, and

its senior officers who participated in the preparation of their Report are eminently qualified. As a product of careful and sophisticated statistical research and presentation their Report is commendable. However, after careful deliberation, I have determined that TWA has not established that a prudent and competent management of TWA acting independently and free of any control or interference on the part of Toolco would and should have calculated in the spring of 1955 the amount of the financial requirements of TWA for the jet aircraft age. It is also my determination that an independent and prudent TWA management would not have accepted the recommendation of Drexel Harriman Ripley that TWA sell in May 1955 \$55.5 million (net proceeds) in common stock of TWA.

For me to find to the contrary would in my opinion endow Drexel Harriman Ripley and an independent prudent Board of TWA in 1955 with a prescience, wisdom and perfection of timing that exceeds the natural capacity of the most experienced men acting without the benefit of hindsight. I am aware that in the spring of 1955 the equity capital of historical TWA reflected the influences of the major stockholder, Toolco, over several years prior thereto, but I am not persuaded that it has been convincingly established that TWA was "obviously short of proprietary capital" in the early part of 1955 (Drexel Harriman Ripley Report, TWA Ex. 5, Part II, p. 21).

TWA and Drexel Harriman Ripley compared the net worth in absolute dollars of TWA with the net worth of its principal competitors and showed that at best TWA was short by \$25.7 million (United Air Lines) and at worst short by \$39.1 million (Pan American) (Drexel Harriman Ripley Report, TWA Ex. 5, Part II, p. 9). In addition, TWA and Drexel Harriman Ripley resorted to

a comparison of certain "yardsticks" applied to TWA and to its principal competitors. Several "yardsticks" were employed: (i) Total Operating Revenue; (ii) Net Operating Income; (iii) Net Income Including Capital Gains; (iv) Revenue Airplane Miles Flown; (v) Available Seat Miles; and (vi) Net Operating Income Per Revenue Airplane Miles and Per Million Available Seat Miles for 5 years 1950-1954 and for one year 1954. Defendants' expert, Loeb, Rhoades, stated that these "yardsticks" are tools normally used for measuring operating performance. On that basis TWA, which as the record discloses had revenue and earnings up to December 31, 1954 that compared favorably with those of its principal competitors, might be said to have made the most efficient use of its equity capital (Tr. 7122-7123). It is deemed significant that a comparison of debt-equity ratios as of December 31, 1954, indicated that TWA with a ratio of 78.4% equity to 21.6% debt was in a better financial position than American and United and about equal to Pan American. (Drexel Harriman Ripley Report, TWA Ex. 5, Part II, p. 9).

Loeb, Rhoades was of the opinion that TWA having placed with Equitable Life a \$40 million Equipment Mortgage Loan in December 1954, was adequately financed. I accept this opinion of Loeb, Rhoades. In January and February 1955 the performance characteristics of commercial jet aircraft and the dates on which they were to be delivered were still far from being settled. It was acknowledged that the delivery dates for jet aircraft were three or more years away. While there was discussion in the trade press and periodicals that commercial airlines were almost certain to be using commercial jets in the future, it was still an open question whether they were to be pure jets or turbo-prop jets (Loeb, Rhoades Report, DX 270, Part II, pp. 6-7). While the Annual Report in 1953

of the National Aviation Corporation, a closed-end investment trust, concentrating on airline and aircraft manufacturing industries regarded the DC7 and the Super Constellation as the last of their kind for mass air travel. Its Report for 1954 referring to the advent of the Vickers Viscount turbo-prop stated that the new "shape of things to come in 1955-58 is in ferment * * *" (See page 196 this Report). In the early months of 1955 Boeing could not say when it would commence the manufacture of commercial jets. Its Annual Report for the calendar year 1954 which bears the date March 7, 1955, was far from definite. The manufacturing facilities, tools and equipment used by Boeing for the manufacture of the U. S. Air Force jet tankers were owned by the U. S. In early 1955 Boeing was seeking, but had not obtained, the consent of the U. S. Air Force to use these facilities for the manufacture of commercial jets (this consent was not obtained until August 1955) (Tr. 6889).

During the spring and summer of 1955 the specifications and performance characteristics of the commercial jet continued to be the subject of speculation and discussion. The functioning of jet aircraft in hot weather, noise at airports and the choice between pure jets and turbo-props, such as the Electra and Vickers Viscount was still unresolved (Tr. 6889-6893). It was not until October, November and December of 1955 that delivery schedules were arranged and firm contracts were signed. It was in those months that the airlines made arrangements to finance the acquisition of jets. The first financing arranged was by Eastern Air Lines on October 31, 1955 for \$90 million, of which \$40 million was earmarked for the purchase of jets. This was followed by the American Airlines financing of \$75 million

arranged on November 1, 1955 and the United Air Lines financing of \$150 million arranged on December 21, 1955, these being solely to finance the acquisition of jets.

I find it unlikely for an independent Board of TWA to have acted upon the Drexel Harriman Ripley recommendation with respect to initiating a plan to secure \$300-400 million over six years in the first quarter of 1955 when there was no proven need for equity capital and when specific information with respect to the performance characteristics and delivery dates of jet aircraft was still unavailable and uncertain. That is to say, I am not persuaded that this information was available in sufficiently definite form to permit the formulation of the financial program of the magnitude which Drexel Harriman Ripley states it would have recommended, and I conclude that an independent prudent Board of TWA would not have accepted and acted upon the Drexel Harriman Ripley recommendations and that the sale in May 1955 of common stock of TWA for \$58.5 million netting TWA \$55.5 million would not have occurred.

But even if an independent prudent Board of Directors of TWA would have concluded in the early months of 1955 that a program should be formulated and acted upon to provide funds with which to finance the long-term acquisition of jet aircraft, I am persuaded by and accept the expert testimony of Loeb, Rhoades to the effect that such a Board would not have implemented the plan advocated in the Drexel Harriman Ripley Report. Loeb, Rhoades in their direct testimony and their cross-examination established the following points: (i) TWA was not clearly in immediate need of equity capital as asserted by Drexel Harriman Ripley; (ii) the \$58.5 million common stock offering exceeded by more than \$11 million the sum total

of all domestic trunk common stock offerings during the 1946-1955 period; (iii) the terms of the one-for-one offering involved an extreme dilution of stockholders' interest; and (iv) the \$58.5 million offering exceeded by \$23 million the sum total of common stock offerings of all other airlines between May 1955 and 1960 (Loeb, Rhoades Report, DX 270, Part II, Exhibit A). It is also significant to note that United Air Lines which was being advised during the period in question by Drexel Harriman Ripley sold no equity to finance jets until 1960, when it issued convertible debentures in the amount of \$25 million.

The recommended October 1, 1955 mortgage debt financing amounting to \$150-170 million was stated by TWA's expert, to be largely dependent on the successful completion of the May 1955 common stock offering. Testimony of both plaintiff and defendants indicated that an improved balance sheet based on a reconstruction of TWA as of September 30, 1955 incorporating the added equity would be a crucial step in securing the large amount of debt conceived by Drexel Harriman Ripley for the fall of 1955.

TWA's expert was faced with a difficult task in offering to prove that large scale financing would have been obtained in 1955 in an amount and on the terms estimated. Relative to the previous year, TWA's quarterly earnings were dropping rapidly after the first quarter of 1955. (Loeb, Rhoades Report, DX 270, Part II, Exhibit F.) It appears that in order to secure the amount indicated at favorable terms that TWA would have had to complete jet financing commitments before lending institutions became cognizant that TWA's earnings deterioration was more serious than a mere seasonal variation. Against this history TWA and Drexel Harriman Ripley endeavored to show that an independent TWA Board would have had

the singular foresight to plan both the common stock offering of \$55.5 million and the October 1, 1955 debt financing of \$150-\$170 million well ahead of its competitors. As indicated above, the advent of commercial jet aircraft was the subject of discussion in the trade press in November and December of 1954 and January of 1955 and was commented upon in the Boeing Annual Report of 1954 which was dated March 7, 1955, and the cost of a commercial jet aircraft was generally accepted to be in the neighborhood of \$4,250,000. Nevertheless, I am satisfied from the record that there remained to be determined as of August-September 1955 (the time which the debt financing would have had to be negotiated) much vital information regarding specific aircraft orders, performance and delivery schedules before realistic bargaining for such large scale funds could take place. Indeed, a \$150-\$170 million loan to TWA on October 1, 1955, would have been almost three times as large as any long-term commitment that had been made to that date to any airline for any purpose. (See page 234 this Report). I conclude that TWA has not proved that either of the 1955 financings could have been reasonably negotiated at the time, in the amount and according to the terms suggested, by an independent and prudent management.

Since the May 1959 equity financing of \$60 million and debt financing of \$90-110 million assumed and were dependent upon the 1955 common stock and mortgage debt financings and since I have determined that the latter on their face as proposed by TWA's expert could not have taken place under the historical circumstances established in the record, I thus find a failure of proof with regard to these subsequent financings. Although the complaint alleges damages attributable to defendants' interference with the proper and timely financing of TWA, I do not feel that I, as Special Master, can independently, with the

record available, make an ultimate determination of any specific amount of damages with respect to financing. Therefore I determine on the whole that no damages be awarded to TWA in respect of the allegations of the complaint set forth above.

In view of my determinations above it is not necessary for me to consider the calculation of the debt burden as of December 31, 1963. However, I do think it might be proper for me to observe that an independent prudent management might have subsequent to December 31, 1963 found opportunities to refinance all or part of the funded debt at more favorable terms and thus nullify the significance of a present value comparison as far as damages are concerned.

IV.

**Loss Due to Delay in Disposal of Displaced
Piston Aircraft**

Plaintiff alleges in paragraph 52 of its complaint that it "was foreclosed from the opportunity for early sales of its obsolescent piston-engine aircraft, causing loss to TWA". It claims that the earlier delivery of the jet aircraft would have allowed it to retire many of its piston aircraft earlier and at least as early as its competitors did (TWA Ex. 2, pp. 22-23) and that a decline in the market prices obtainable for these aircraft during that period caused TWA damages of \$6,880,600, before trebling (TWA Ex. 6B, pp. 9, 24-26). TWA has lowered this claim to \$5,700,000 before trebling by taking into consideration possible losses due to uncollectible items receivable (Plaintiff's Brief 231).

TWA does not contend that the acquisition of any particular jet airplane would have caused the retirement of any particular piston plane or planes (Tr. 1649), and it states that as the jet aircraft were delivered over a period of time, they displaced piston aircraft from certain routes which in turn displaced other piston aircraft from other routes, and so on, in a chain reaction which made piston aircraft available for sale which were not necessarily the particular planes which had been serving the routes to which the jet aircraft were assigned (Tr. 1649-50, 1799-1800). Nor does TWA contend that there is a specific relation in terms of seating capacity between the jet aircraft and the piston planes retired in connection with their acquisition (Tr. 1683, 1799). Its claim rests on the broader assertion that until it received jet aircraft it was re-

quired to keep sufficient piston aircraft to carry on its business (Tr. 1596, 1600, 1798). The proof it offers as to the loss it sustained is put forward as a reasonable estimate of the number of sales of piston aircraft which were delayed, the extent of the delays, and the cost to TWA of the delays (Plaintiff's Brief 230).

It will be recalled from the discussion under Section I of this Report that the hypothetical jet fleet of reconstructed TWA used in computing lost operating profits consisted of 63 jet aircraft. As a basis for computing damages under this Section IV, Rummel constructed Annex F to TWA Exhibit 2 (hereinafter "Annex F") in which he first listed the delivery dates of the first 63 jets historically received by TWA and the delivery dates of the first 63 jets assumed to have been received by reconstructed TWA. Rummel next determined how many days earlier reconstructed TWA would have received each of its first 63 jets than it historically received each of its first 63 jets ("jet gain days"). Rummel also listed chronologically the sales dates for 103 piston aircraft which TWA historically sold between December 31, 1958, and July 20, 1962 (the latter date being the date on which TWA sold the last piston aircraft it sold before receiving its 63rd jet) (Tr. 1593, 1630). Rummel then determined reconstructed piston sale dates by moving forward the sale date of each of the 103 pistons a number of days ("piston gain days") equal to the jet gain days of the reconstructed jet with which it was linked (Tr. 1607, 1690). The pistons were linked to the jet by the following method:

Rummel linked the first jet received to those (four) of the 103 piston aircraft which TWA sold prior to the receipt of that jet airplane (Tr. 1647). He then took the period the delivery of the jet was delayed, jet gain days,

which is 60 days, and advanced the date these four piston aircraft were actually sold by 60 days to arrive at a "reconstructed piston retirement" date. The actual retirement date listed for each piston aircraft is the date the airplane was historically sold and the reconstructed retirement date is the date on which TWA claims for damages purposes the plane would have been sold if the delivery of the "linked" jet aircraft had not been delayed (Tr. 1631-32, 1653, 1689-90, 1724). The second jet received by TWA was delivered on March 17, 1959.* In Annex F, TWA has linked to the second jet the piston aircraft actually sold prior to the delivery date of that jet airplane and subsequent to the delivery date of the jet airplane previously received (Tr. 1700-01). As the second jet is claimed to have been delivered 76 days late, TWA asserts in Annex F that the piston aircraft linked to it would have been retired 76 days earlier.

This system is used throughout Annex F to attribute to each of the 103 piston aircraft a reconstructed retirement date. The number of days by which the reconstructed dates are advanced vary from 11 to 707. As each piston aircraft is linked to the first jet airplane which was delivered after the piston plane was sold, jet airplanes which were delivered after the delivery of other jet airplanes by an interval in which no piston aircraft sales took place are not linked to any piston aircraft and therefore play no part in TWA's computation of days by which piston retirement dates are reconstructed. For example, no piston aircraft were actually sold between March 25, 1959, when the airplane listed on Annex F as Piston No. 7 was sold, and June 26, 1959, when the airplane listed

* The date March 17, 1958, appearing in Annex F is a typographical error; the plane was delivered on March 17, 1959 (Tr. 1696).

on Annex F as Piston No. 8 was sold. Between these two dates, nine jet aircraft were delivered at various times from March 30, 1959, to June 13, 1959, but eight of these nine jet airplanes are not linked to any piston aircraft. Although TWA does not contend that any particular piston airplane would in fact have been sold on its reconstructed retirement date, it offers Annex F as "a reasonable construction of events that could have been expected" to occur (Plaintiff's Brief 234, Tr. 1632).

Plaintiff based its estimates as to the price which it would have obtained for the displaced piston aircraft upon a study made by R. Dixon Speas Associates, aviation consultants with extensive experience in evaluating aircraft. The study was presented through the prepared testimony of Mr. R. Dixon Speas (TWA Ex. 6B). The report reflected a study made by Speas Associates of the market for used piston aircraft offered for sale by the various United States trunk line air carriers for the years in question and concluded with the opinion that if the 103 piston aircraft had been sold earlier at the reconstructed retirement dates, TWA would have received 6.9 million dollars greater proceeds than it did historically for those aircraft.

To determine the price which TWA would have obtained on the reconstructed retirement date for each of the piston aircraft, Speas has constructed by statistical analysis sales price trends, by types of aircraft, of all the aircraft sold by United States trunk line air carriers from January 1, 1958, to June 30, 1964. These sales price trends are depicted in the figures set forth at pages 33-43 of TWA Exhibit 6B, where in every class of aircraft the trend line so constructed by TWA declines throughout the period. To determine the damages claimed for each piston air-

craft, Speas, at pages 24-26 of TWA Exhibit 6B, applies the rate of market price decline for aircraft of that type to the period of delay equal to "piston gain days" arrived at in formulating reconstructed retirement dates in Annex F.

For purposes of reference it is noted that the prices actually received by TWA for the piston aircraft it sold in the period from January 1, 1958, to June 30, 1964, including the 103 aircraft it links to the delivery of jet aircraft, are set forth at pages 80-85 of TWA Exhibit 6B, and the prices received by other United States trunk line air carriers in the sales of piston aircraft in the same period are set forth at pages 122-154 of the same exhibit.

Defendants attack the validity of TWA's proof. They contend that the reconstructed retirement dates for piston aircraft are meaningless without proof that the earlier delivery of particular jet airplanes would have advanced the sale of particular piston airplanes, and advanced them an equal number of days (DX 324, p. 5). Defendants also attack TWA's price trend lines. Although they do not dispute the validity of the mathematical basis for the trend lines given all the assumptions used by Speas, they contend that the lines are constructed with reference to inappropriate data (Defendants' Brief 281). They point out that the condition of the aircraft and the nature of the sales transactions were not considered and that the trend lines are based in part on data for periods not relevant to the aircraft in question (DX 324, pp. 5-6). Defendants also point out that TWA's computations give no consideration to benefits which TWA could offset against losses in sales prices, such as depreciation and the use of the aircraft while allowing the usable flight time after overhaul of air frames, engines, and propellers to expire

(DX 324, p. 6), and that the average cost of a full overhaul on the two-engine planes, which are the M-202 and M-404 aircraft, exceeds \$100,000 and the cost of overhaul of larger piston aircraft is greater (DX 324, pp. 32-34). Defendants also contend that there was not a steady market for each of the types of piston aircraft retirement by TWA (Defendants' Brief 284-86). They further contend that any comparison of the sales by TWA to the sales by other airlines should entail an examination of the percentage of each airline's piston aircraft sold during the initial period of jet aircraft acquisition. (DX 324, p. 7).

In supporting their contention that the sales transactions were not sufficiently homogeneous to warrant their use in the construction of price trend lines, defendants maintain that sales which were actually trade-ins on jet acquisitions or sales to buyers which entailed a high risk of default were made at prices far higher than could be obtained from arm's length, financially responsible buyers (DX 324, pp. 14-17). Defendants also contend the sales of any aircraft for less than \$100,000 were not sales for use as airplanes but as scrap (DX 324, p. 17), implying that either these aircraft were not usable for flying or there were no buyers. In addition, defendants contend that TWA did not require the 103 piston aircraft during the period in question, and to illustrate this they set forth tables comparing the normal utilization of certain aircraft types with TWA's utilization during that time (DX 324, pp. 21-26).

TWA attempts to meet defendants' contention that the reconstructed retirement dates cannot be taken as dates when the aircraft would have been sold by arguing that it cannot be said that the absence of sales at any time within the period means there were no buyers, for sales took place throughout the period and to say that an absence of sales indicates an absence of buyers is "improb-

ably deterministic" (Plaintiff's Brief 235). As TWA asserts, its claim is based on the proposition that market prices declined steadily and continuously during a six-year period beginning in mid-1958 (Plaintiff's Reply Brief 119). TWA attempts to meet defendants' contentions that the trend lines are based on sales which are too disparate to be compared by arguing that the factors which distinguish particular sales average out in the formulation of the trend lines (Plaintiff's Brief 239-44). In particular, TWA contends that any differences in sales prices accounted for by differences in flying time since overhaul are random and that airlines provide "progressive maintenance" and do not allow aircraft to be flown without maintenance until they require a complete overhaul (Plaintiff's Brief 239). TWA also contends that each piston aircraft it sold was, on an average basis, approximately 50 per cent "run out of time" (Plaintiff's Brief 244).

Proof of any actual relation between the acquisition of jet aircraft and the retirement of the piston aircraft, other than the chronology set forth in Annex F, was not introduced. It was apparently available to TWA, for Rummel testified that TWA had charts showing probable piston aircraft retirements as a function of the acquisition of jet aircraft (Tr. 1801) and made several references in his testimony to a specific piston retirement plan.* He also

*"Forward planning regarding fleet composition" (Tr. 556), "the removal of a fleet or fleets would be on a plan known basis" (Tr. 562), the disposition "did reflect planning" (Tr. 1611), "the development of plans" (Tr. 1619), "the specific plan for retirement" (Tr. 1638), "the plan" (Tr. 1641), "the plan to retire pistons" (Tr. 1653), "in the overall piston retirement plan we spoke of release of airplanes in terms of what they would do" (Tr. 1722), a "disposal plan" (Tr. 1745), and an "overall plan" (Tr. 1755). TWA personnel were assigned the formulation of a plan to retire piston aircraft (Tr. 1616, 1628-29). There was a broad plan in writing contained in the Jet Plans and Premises Manual which did not link the retirement of particular piston planes to specific jet deliveries (Tr. 1624), and certain exhibits introduced by defendants are taken from this source (Tr. 1666, 1670).

testified that he chose the dates of actual sales "rather than a plan" as the basis of TWA's proof on this issue (Tr. 1641).

I accept as "well-pleaded" the allegation of paragraph 52 of the complaint that plaintiff was foreclosed from the opportunity for early sales of piston aircraft, but I determine for the reasons set forth below that TWA is not entitled to the damages it claims in its proof with respect to losses due to delay in having piston aircraft available for sale. Defendants have proved conclusively that TWA's decisions to retire or retain many of the 103 aircraft were based on considerations having no connection with the acquisition of jet aircraft or defendants' acts and that the losses claimed in the proof offered by TWA with respect to the remainder of these aircraft cannot be said to be the result of defendants' acts. Instances of these failures in proof are set forth in the detailed review which follows. Moreover, the statistical analysis used by the plaintiff is deficient for the reasons advanced by the defendants and summarized above. The detailed application of the analysis of each type of piston plane sold by TWA, as set forth below, indicates clearly the unreasonableness of the results obtained under the methodology used, and plaintiff's claim under this Section IV is rejected in its entirety.

M-202A Aircraft

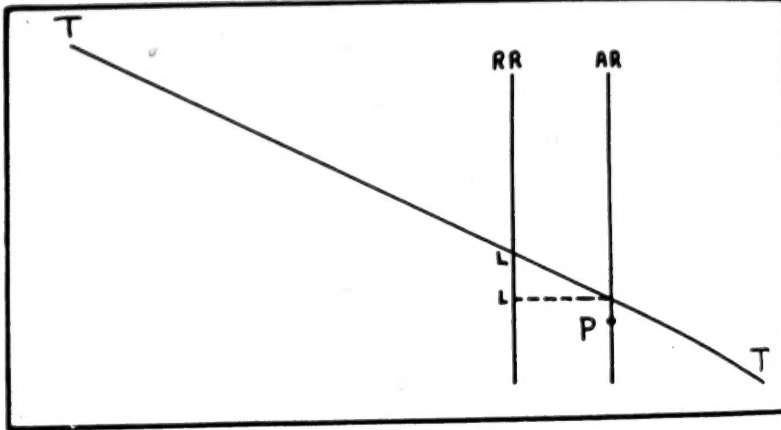
TWA claims damages of \$75,800, before trebling, for delay in having eleven M-202A aircraft available for sale (TWA Ex. 6B, p. 9). These are short-range, two-engine airplanes. According to TWA's proof, the earliest date at which any of these aircraft would have been sold had there been no delay in the receipt of jet aircraft is No-

ember 1, 1958, which is the "reconstructed retirement date" set forth in Annex F for Piston Aircraft No. 1. The proof shows, however, that TWA historically made these aircraft available for sale in December 1957 and that on February 15, 1958, TWA announced that they were retired from service (Tr. 1656, 1661, DX 35). As these aircraft were put up for sale and retired from service prior to their reconstructed retirement dates, TWA's claim that a delay in the availability of these aircraft for sale due to a delay in receiving jet aircraft caused the loss to TWA claimed in its proof cannot be sustained. My reasoning in support of this conclusion follows:

TWA's claim is for losses due to a delay in having certain aircraft available for sale. It has computed its damages for that delay in a series of steps, the first of which, as described above, are (1) the computation of piston gain days, (2) the formulation by statistical analysis of trend lines which show the market price for each type of aircraft declining throughout the period at a steady rate, and (3) the determination of the decline in market price during the period between the reconstructed retirement date and the actual retirement date by translating the piston gain days for each aircraft into quarters of delay and multiplying the quarterly rate of market decline for the particular type of aircraft by the number of quarters of delay. The next step is to put forward the resulting amount not only as the decline in market price between the reconstructed retirement date and the actual retirement date but also as the amount of damages claimed for delay in having the aircraft available for sale. The claim that the delay in acquiring jet aircraft caused a loss in this amount is apparently based on the contention that TWA's failure to sell the aircraft between the recon-

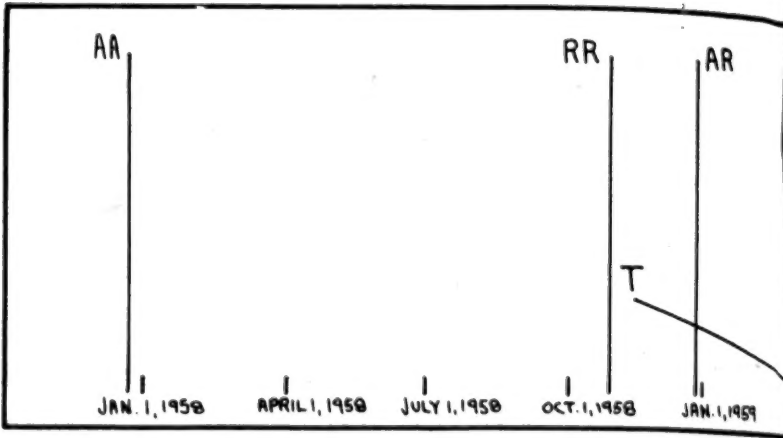
structed retirement date and the actual retirement date was caused by delay in receiving jet aircraft. An alternative possible basis would be the contention that this amount equals the decline in market price during earlier, but equal, periods of the delay in having aircraft available for sale.

At first Rummel testified that the theory of TWA's proof was that the piston aircraft were not available for sale prior to the date of actual retirement (Tr. 1612, 1613-14) and he also testified that the piston aircraft were needed at the reconstructed retirement dates because of the lack of having jet aircraft (Tr. 1633). This testimony indicates that it is TWA's contention that because of the jet delivery delays the aircraft could not be given up prior to their actual retirement dates and therefore that the fall in market price between the reconstructed retirement date and the actual retirement date is TWA's actual loss. TWA's proof in this respect may be set forth in graph form as follows:



The line TT represents a TWA trend line of market prices for a particular type of aircraft over a period of time, where time is measured horizontally and price is measured vertically. The time and price at which a particular airplane is sold is represented by the point P. Thus a vertical line AR passing through P represents the actual retirement date, and a vertical line RR placed to the left of AR by the amount of piston gain days for the aircraft represents its reconstructed retirement date. The decline in market price during the period of piston gain days is therefore represented by a segment the length of LL.

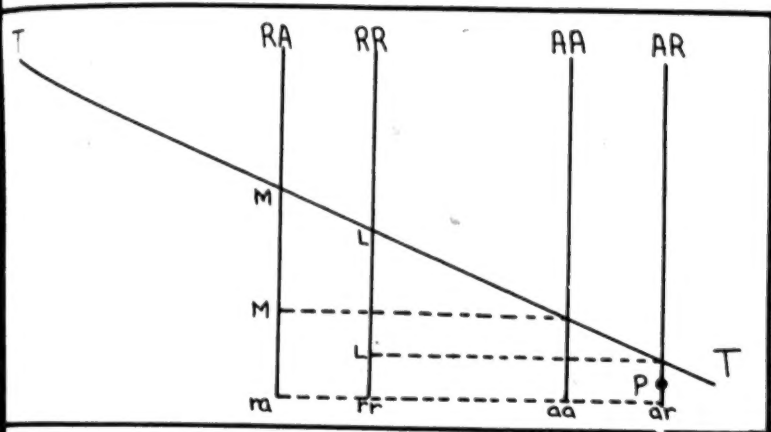
It was established, however, that TWA actually made many piston aircraft available for sale not only in advance of their actual retirement dates but in advance of their reconstructed retirement dates. In some instances piston aircraft were actually made available for sale approximately two years prior to the earliest reconstructed retirement date for any aircraft of that type (DC-4 aircraft; DX 324, p. 67; Annex F). In the case of M-202A aircraft, the planes were available for sale at least as early as December 1957 while the earliest reconstructed retirement date set forth in Annex F for any aircraft of this type is November 1, 1958, and the earliest actual retirement date for these aircraft is December 31, 1958. A graph showing these dates with respect to the first M-202A airplane sold would appear as follows, with the line AA representing a date as of which the proof has established the aircraft was actually available for sale:



Rummel also testified that piston aircraft were available for sale earlier than the dates listed in Annex F and that the reconstructed retirement date is not the date an airplane would have been available for sale but the date it is assumed it would have been sold (Tr. 1631-32, 1633, 1692, 1751, 1754, 1756). He testified that in Annex F TWA assumed that if the jet aircraft had not been delayed, the piston aircraft would have been available for sale in advance of the reconstructed retirement dates "exactly to the same degree" that the dates they were actually made available for sale preceded the actual retirement dates (Tr. 1751) and that the time it would have taken to make the reconstructed sale may be assumed to be the same as the time it took to make the actual sale (Tr. 1753). This testimony indicates that TWA seeks as damages the difference in market prices on the reconstructed retirement date and the actual retirement date on the theory that, although aircraft were available for sale prior to the reconstructed retirement dates, it takes a certain amount of time to sell any particular airplane even when a market exists. Possibly TWA contends alternatively that that amount is equal to the decline

in market value during the period it actually complains of, that is, the period of delay in having the aircraft available for sale, which decline would be equal to the decline in market price in the later period between the reconstructed retirement date and the actual retirement date because (1) the lead times between having aircraft available for sale and selling them would be the same in both cases and (2) the trend line shows a market price decline at a steady rate.

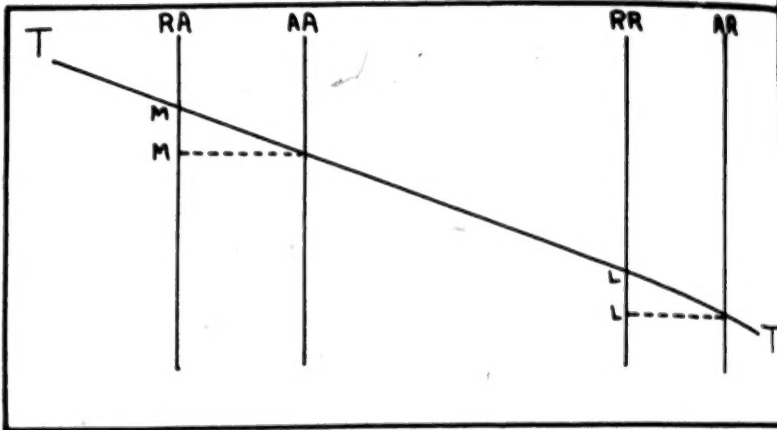
Rummel's introduction of the factor of equivalent lead times may be set forth in graph form as follows:



The vertical line AA plotted to the left of AR represents the date the aircraft was actually available for sale, and on TWA's assumption that the time it took to effect the sale would have been the same at any earlier time, a vertical line RA representing the reconstructed availability date would lie as far to the left of RR as AA is from AR. The segments shown on the graph as ra-rr and aa-ar are equal, and therefore adding the segment rr-aa to each of them results in the segment ra-aa being equal to rr-ar.

The segment MM therefore equals the segment LL, which expresses the conclusion that the decline in market price in the period of delay in having aircraft available for sale equals the decline in market price between the reconstructed retirement date and the actual retirement date.

Where the proof shows that an aircraft was actually available for sale prior to its reconstructed retirement date, a graph would show the lines AA and RA to the left of line RR:



In this situation the particular proof of loss attributable to defendants' acts put forward by TWA cannot be sustained. No matter which of the theories described above underlies TWA's claim, the damages claimed are based upon the assertion that the aircraft would have been sold on certain dates, the earliest of which, in the case of M-202A aircraft, is November 1, 1958, while defendants have shown that the aircraft were available for sale prior to that time, at least as early as December 1957 for M-202A

planes. If there was a market throughout the period, as TWA asserts (Plaintiff's Brief 235, Tr. 3688, Plaintiff's Reply Brief 119, 122)) and must assert to support its contention that planes could have been sold throughout the period earlier than they were, the delay in selling these planes after they were no longer needed cannot be said to be caused by defendants' acts. The proof does not show that there is any particular number of months or years required to effect the sale of an airplane once it is placed on the market. On the contrary, the evidence shows that planes of the same type, even when made available for sale at the same time, were sold at widely varying times after becoming available for sale. The contention of TWA that it may be assumed that the period between availability and sale would be the same whenever a plane is made available for sale, thereby requiring an earlier, reconstructed availability date to enable a sale to take place on the reconstructed retirement date, is conclusively disproved. As defendants were not responsible for TWA's failure to sell these aircraft from December 1957 on, I am unable to find that the loss it claims in its proof to have sustained upon the sale of the M-202A aircraft, which sales occurred over the period December 31, 1958, to October 1, 1959 (Annex F), is due in any part to a delay prior to December 1957 in having the aircraft available for sale or that the damages claimed may be a measure of a loss attributable to the period of delay in availability. Moreover, the proof conclusively shows that these aircraft were made available for sale prior to "mid-1958" which TWA asserts was the commencement of a six-year price decline (Plaintiff's Reply Brief 119). In addition, in view of TWA's assertion that there was a market for the sale of the aircraft, I conclude that TWA has failed in its proof

based on the assertion that, as a reasonable reconstruction of events that would have occurred, an airplane would have been sold on a certain day if the acquisition of jet aircraft had not been delayed, where defendants have shown that the aircraft was actually made available for sale by TWA prior to that time.*

In considering TWA's proof above, I have treated as valid its basic assumption that there was a market throughout the period, the existence of which would have enabled airplanes to be sold on their reconstructed retirement dates at market prices which declined at a steady rate. Rummel testified, however, that the market was glutted by the time TWA's planes were available for sale (Tr. 1636),** and if that is the fact TWA's methodology is further invalidated.

Moreover, TWA's proof shows that from 1959 to 1963 there was an elimination of 15,000 short-segment departures resulting from a TWA decision "to eliminate the short stage length departures operated with piston aircraft, because they were not profitable and had nothing whatsoever to do with the advent of the long-range aircraft, which is the

* Rummel conceded that a document showing M-202A aircraft to be available for sale in February 1958 indicated that he could not say that the first four of these aircraft sold were timed to the first jet as is shown in Annex F (Tr. 1668). Rummel also testified that he could not say the M-202A listed in Annex F as Piston No. 21 and linked to Jet No. 16 was needed by TWA until the delivery of that jet in view of proof that TWA leased the piston plane on January 14, 1959 (Tr. 1679) and again on June 13, 1959 (Tr. 1681-82). The reconstructed retirement date for that plane in Annex F is June 17, 1959. Similarly, the M-202A airplane listed in Annex F as Piston No. 22 was leased twice prior to its reconstructed retirement date of June 17, 1959, the second leasing taking place on June 6, 1959 (Tr. 1685-86). Piston No. 13 was leased on June 27, 1959, and has a reconstructed retirement date of June 29, 1959 (Tr. 1690-91).

** Defendants showed that TWA did not lag behind its competitors in 1958-1959 in selling piston aircraft (Tr. 3692-93) and takes the position that the market decline took place at that time (Defendants' Brief 285).

subject of our analysis and estimates." (Tr. 10642-43 and TWA Ex. 443). That the M-202A aircraft were all operating on average stage lengths of less than 300 miles and were the subject of this managerial decision (Defendants' Brief 290) is undisputed. The elimination on this scale of the short stage length departures operated with piston aircraft having no connection with the introduction of the jet aircraft into service makes it impossible to conclude that the short-range M-202A aircraft were retained because the delivery of long-range aircraft was delayed. The claim for damages with respect to these aircraft is disallowed in its entirety. It is noted that the first four aircraft of this type which were sold form the starting point of the trend line set forth at page 33 of TWA Ex. 6B. There is no evidence to support the conclusion that higher prices were obtainable for aircraft of this type between November 1, 1958, and the date on which they were sold, December 31, 1958, and the trend lines of market prices constructed by TWA do not purport to show that higher prices were available prior to the initial sales which constitute the starting points of the trends (Tr. 3610-11, 3612). For that reason also, TWA's proof does not support the damages it claims with respect to these aircraft.

L-1049, L-1049G and L-1049H Aircraft

TWA claims damages of \$808,100, before trebling, for delay in having eleven aircraft of the types L-1049, L-1049G, and L-1049H available for sale (TWA Ex. 6B, p. 9). Speas testified that he considered the L-1049, L-1049G, and L-1049H aircraft to be enough alike to use the same market decline in computing damages for aircraft of all these types (Tr. 3644). The trend line constructed for the market price of these aircraft is apparently based

solely on data of L-1049 sales, and the data for L-1049G and L-1049H aircraft were not used in determining the trend line (TWA Ex. 6B, pp. 24, 26, 38, 85, Tr. 3643), although the quarterly market declination rate constructed with reference to L-1049 aircraft is used as the basis for computing the claimed loss attributable to L-1049G and L-1049H aircraft (TWA Ex. 6B, pp. 24-26). TWA contends that using the sales data for the L-1049H aircraft would result in a trend line which would not be reliable because it would have a low coefficient of correlation (Tr. 3789). All nine of TWA's L-1049 aircraft were listed for sale on February 6, 1959 (Ex. G annexed to DX 324), while according to TWA's proof the earliest date on which any of the planes would have been sold if the jet aircraft had not been delayed was July 18, 1959, which is set forth in Annex F as the reconstructed retirement date for Piston No. 16, the damaged L-1049G for which TWA claims no damages on the ground that it was damaged prior to its reconstructed retirement date. (TWA Ex. 6B, p. 24; Tr. 1707, 1737). The next earliest reconstructed retirement date was September 24, 1959, which is set forth in Annex F as the reconstructed retirement date for the L-1049 airplane listed as Piston No. 26. Only five of the nine L-1049 aircraft were sold by June 30, 1964 (TWA Ex. 6B, pp. 80-85).

As these aircraft were listed for sale prior to the earliest reconstructed retirement date for aircraft of any of these types and are enough alike for TWA to value them on the same trend line, for the reasons set forth above with respect to M-202A aircraft, TWA's claim that a delay in the availability of these aircraft for sale due to a delay in receiving jet aircraft caused the loss to TWA claimed in its proof cannot be sustained. Moreover, if only the data of

L-1049 sales will serve as the basis of a trend line having a reliable coefficient of correlation, TWA's claim that losses with respect to the other types may be measured by the trend line, with which their own data is incompatible, is not accepted. The claim with respect to these aircraft is therefore disallowed in its entirety. It is noted that the aircraft which is plotted on page 38 of TWA Ex. 6B as sold in the second quarter of 1963 is the same plane that is also plotted as having been sold in the fourth quarter of 1960, having been repossessed in the interim (Tr. 3643). It was therefore available for sale at least as early as the time of its first sale. It is also noted that if the sale of this aircraft, which occurred after the period of the sale of the 103 aircraft, had not been considered, TWA's claim would concededly be reduced by \$120,250 (Tr. 3779).

DC-4 Aircraft

TWA claims damages totalling \$91,800, before trebling, with respect to delay in having available for sale six DC-4 aircraft (TWA Ex. 6B, p. 9). On July 27, 1957, TWA authorized the sale of all these aircraft (DX 324, p. 67, Tr. 1729-30, 1739) and offered aircraft of this type for sale through an aircraft broker on January 2, 1959 (DX 324, p. 67 and Ex. G annexed thereto where this type is referred to as C-54). The earliest of the dates to which TWA's proof shows the sale of any of these planes would have been advanced if the delivery of jet aircraft had not been delayed is June 8, 1959, which is the reconstructed retirement date set forth in Annex F for Piston Aircraft No. 8. As these aircraft were for sale prior to any period of delay in their sale claimed to be caused by the delay in receipt of jet airplanes, for the reasons set forth above with respect to M-202A aircraft, TWA's claim that a delay

in the availability of these aircraft for sale due to a delay in receiving jet aircraft caused the loss to TWA claimed in its proof cannot be sustained. Moreover, minutes of TWA's Board of Directors show that TWA made these planes available for sale because they were being operated at a loss, not because they were no longer needed by reason of the acquisition of jet aircraft (Tr. 1729-30, DX 37). The date they were made available for sale was prior to "mid-1958" which is the time TWA asserts the six-year price decline commenced (Plaintiff's Reply Brief 119). In addition, these aircraft were all configured for cargo or engine carrying service rather than passenger service (DX 324, p. 67, Tr. 1716). The claim for damages with respect to these aircraft is disallowed in its entirety.

It is noted that in a sale of a group of four of these planes by TWA in 1959 the price paid by the buyer and plotted by TWA at page 35 of its Exhibit 6B, purchased not only four aircraft but also 29 extra engines (Tr. 3657). One of the other of these four-engine aircraft which is plotted on the same chart was apparently sold with only one of its engines (Tr. 3658-59). TWA's proof indicates that the factor of extra engines would reduce the quarterly market price decline from \$12,400 to \$12,000 (Tr. 3784). It is also noted that if sales in the first three quarters of 1958 and the fourth quarter of 1962 had been eliminated in determining the rate of market price decline for this type of aircraft, TWA's claim would concededly be \$37,740 less (Tr. 3772).

L-1649A Aircraft

TWA claims damages of \$1,461,900, before trebling, with respect to delay in having available for sale four L-1649A aircraft (TWA Ex. 6B, p. 9). These are long-range air-

craft which were directly replaced in function by the jet aircraft. In view of Rummel's testimony that TWA would have liked to sell these aircraft earlier because they were uneconomical but delayed their retirement because they were substantially undepreciated (Tr. 1800), any loss resulting from a decline in the market price obtainable for these aircraft cannot be attributed to the acts of defendants.¹ The claim for damages with respect to the delay in the availability of L-1649A aircraft for sale is therefore disallowed in its entirety.

The damages claimed with respect to the first two aircraft sold of these four would have to be disallowed in any event, for they were the first aircraft of that class to be sold by any airline in the period from January 1, 1958, to June 30, 1964, and each brought the highest price obtained to the date of its sale. There is no evidence to support the conclusion that a higher price was obtainable for aircraft of this type between January 1, 1958, and the dates on which they were sold in the fall of 1960, and the trend lines of market prices constructed by TWA do not purport to show that higher prices were available prior to the initial sales which constitute the starting point of the trend (TWA Ex. 6B, p. 39, Tr. 3610-11, 3612). Similarly, the damages claimed for the last two aircraft sold of this type would have to be reduced, for their reconstructed retirement dates are dates prior to the initial sales, and plaintiff's computations in effect extend the price trend lines to times prior to the commencement of the trend. All the sales of aircraft of this type were sold by TWA, and the

¹ There is other TWA proof that aircraft of this type were ordered with full knowledge of the coming of jet aircraft because of their "cash generating power" and that even with the advent of jet planes there would be a need for aircraft of this type for several years (Tr. 3795).

first four of these sales were to a buyer outside the country and without a credit rating, factors which TWA admits would affect the sales prices (Tr. 3621). These planes were later repossessed by TWA (Tr. 3628).

L-749A Aircraft

TWA claims damages of \$346,000, before trebling, for delay in having three L-749A aircraft available for sale (TWA Ex. 6B, p. 9). The proof shows that TWA sold two L-749 and three L-749A aircraft during this period (TWA Ex. 6B, pp. 81-85) and that it offered "several Lockheed model 749 and 749A Constellation airplanes for sale" as early as July 25, 1958 (Exhibit F Annexed to DX 324). As TWA's L-749A aircraft were listed for sale prior to the earliest reconstructed retirement date for aircraft of this type, which is set forth in Annex F as July 13, 1959, (Piston No. 23) for the reasons set forth above with respect to M-202A aircraft, TWA's claim that a delay in the availability of these aircraft for sale due to a delay in receiving jet aircraft caused the loss to TWA claimed in its proof cannot be sustained. TWA's claim for damages with respect to L-749A aircraft is therefore disallowed in its entirety.

Even apart from the proof that TWA made these aircraft available for sale in July, 1958, its claim for damages could not be granted in the amount requested. The first L-749A airplane sold by any airline in the period between January 1, 1958, and June 30, 1964, was the plane listed in Annex F as Piston Aircraft No. 23 (TWA Ex. 6B, p. 37). This airplane was sold at a substantially higher price than any other aircraft of its type. There is no evidence to show that a higher price would have been obtainable had the plane been sold at an earlier date, and, as shown above with

respect to M-202A and L-1649A aircraft, the trend line constructed by plaintiff does not purport to show higher prices prior to the initial sale. TWA's claim for damages with respect to this airplane would therefore be disallowed in any event.

The second aircraft of this type sold by TWA is the plane listed in Annex F as Piston Aircraft No. 58. This plane was actually sold on November 24, 1961, and according to Annex F, it would have been retired by March 12, 1960, except for the defendants' delay in furnishing jet aircraft. The proof shows, however, that at least as early as August 17, 1960, TWA considered that this aircraft was not needed, for at that time it leased it to another company (Tr. 1771), and therefore the fact that TWA did not sell this plane in the period from August 17, 1960, to November 1961 cannot be attributed to its claimed need to retain aircraft because of delay in receiving jet aircraft. The period from March 12 to August 17, 1960, is one of 1.7 quarters rather than the 6.8 quarters which was used to compute the damages attributed to this plane at page 25 of TWA Exhibit 6B, where the aircraft is listed as No. 44 under its registration number N-6017C. Using TWA's method of computing damages, the maximum decline in market price which could have been related to delay in receiving the jet aircraft referred to in Annex F as Jet No. 52 is \$37,230, which is the rate of quarterly market decline for this aircraft type computed by TWA of \$21,900 (TWA Ex. 6B, p. 25) for a period of 1.7 quarters.

Not all of this loss could be attributable to the acts of defendants, however. As has been determined above, defendants are not responsible for part of the delay in the delivery of the 30 Convair 880 jet aircraft. In Annex F, the last 48 of the 103 piston aircraft, Piston Nos. 56-103,

are related to timely deliveries of Convair 880 jet aircraft with respect to which defendants are not responsible for 60 days of the delivery delay, and this particular piston airplane, Piston No. 58, is linked to the nineteenth Convair 880. Therefore, even if damages could be awarded with respect to any aircraft of this type, defendants could not have been responsible for damages for delay with respect to this airplane for a period greater than one quarter.

The third aircraft of this type with respect to which TWA claims damages is the plane listed in Annex F as Piston Aircraft No. 103. This plane has registration number N-6012C and appears also as No. 103 at page 26 of TWA Exhibit 6B. The plane was actually sold on July 20, 1962, and TWA has assigned it a reconstructed retirement date of August 12, 1960. At approximately that time an aircraft of the same type was sold for \$164,000 (TWA Ex. 6B, p. 78). The aircraft actually sold in the third quarter of 1960 is the only airplane of this type sold by an airline other than TWA in the period January 1, 1958, to December 31, 1964, and there were only five sold by TWA. The actual sale of an airplane of this type at the time of the reconstructed sale date raises the question whether the better evidence of the price TWA would have obtained for this plane is the price actually obtained by its competitor at that time or the higher price claimed by TWA, which is the price actually received for the airplane later plus the amount the market price declined from the reconstructed retirement date to the actual sale date as shown by the trend line TWA has set forth at page 37 of its Exhibit 6B.

TWA attributes the fact that particular sales prices fall above or below its trend lines to random differences in the condition of the aircraft of any particular type (Plain-

tiff's Brief 239-40, 242). The only two aircraft of this type for which the engine and airframe condition are in evidence are the TWA aircraft bearing registration numbers N-6012C and N-6017C (TWA Ex. 421, p. 3). These planes brought approximately the same price although N-6017C was sold on November 24, 1961, and N-6012C was sold on July 20, 1962. The trend line set forth at page 37 of TWA Ex. 6B represents a decline in market price of approximately \$58,400 in that time, and as there are so few aircraft on which this trend line is based, if the condition of the plane which was sold later was equivalent to or better than that of the plane which was sold earlier, there would be reason to refer to the actual sales price at the reconstructed retirement date, rather than to apply the trend-line market price decline to the price later received. According to TWA, reference to actual sales at the reconstructed sale dates would be a valid method of determining loss (Tr. 3685). TWA's Exhibit 241 shows, however, that the later-sold airplane had more hours of flying time before an airframe overhaul was required and before an overhaul was required of any of its four engines. This difference in the condition of the two airplanes is consistent with TWA's explanation of deviation of particular prices from the trend lines and supports the validity of the trend line constructed for this type of aircraft. In the absence of similar information with respect to the aircraft actually sold in the quarter of the reconstructed retirement date, TWA's reliance on the trend line is accepted for this purpose with respect to aircraft of this type.

Even if damages could be awarded with respect to aircraft of this type, the damages of \$170,830 claimed by TWA with respect to this airplane would have to be diminished in view of the determination made above that

defendants were not responsible for part of the delay in the delivery of the 30 Convair 880 aircraft. Annex F shows that the last 48 of the 103 aircraft are related to deliveries of jet aircraft of this type and that this particular piston airplane, which is the last of the 103 piston aircraft to be sold, is linked to the twenty-seventh Convair 880 airplane. Any period of the delay in retiring piston aircraft No. 103 attributable to the acts of defendants would therefore have been diminished by 60 days with the result that damages with respect to this aircraft would necessarily have been diminished by at least \$14,600 to \$156,220.

M-404 Aircraft

TWA claims damages of \$1,009,300, before trebling, for the delay in having 37 M-404 aircraft available for sale (TWA Ex. 6B, p. 9). These are short-range, two-engine aircraft, and, as shown above with respect to M-202A aircraft, TWA's proof shows that from 1959 to 1963 there was an elimination of 15,000 short-segment departures resulting from a TWA decision "to eliminate the short stage length departures operated with piston aircraft, because they were not profitable. It had nothing whatsoever to do with the advent of the long-range jet aircraft, which is the subject of our analysis and estimates." (Tr. 10,642-43 and TWA Ex. 396, 443). For this reason, as in the case of the M-202A aircraft, TWA's claim with respect to M-404 aircraft is disallowed in its entirety. Although it is therefore unnecessary to examine in detail the computation of damages with respect to M-404 aircraft, it should be noted that TWA had aircraft of this type available for sale from a time not shown by the proof until March 11,

1959 (Ex. E annexed to DX 324) and that 18 aircraft of this type were gradually sold by March 20, 1961,¹ when TWA declared the remaining 19 aircraft surplus (Tr. 1747-48, DX 39). In addition, no damages could be granted with respect to the first three aircraft of this type sold by TWA, listed in Annex F as Piston Nos. 5, 6 and 7, as, for the reasons set forth above with respect to M-202A and L-1649A aircraft, these aircraft form the starting point of TWA's trend line (TWA Ex. 6B, p. 34), and there is no reason to believe that the market price was higher at an earlier time than the prices obtained for these aircraft. Moreover, as the last 19 of these aircraft were actually available for sale from March 20, 1961, prior to both the reconstructed and actual retirement dates, the delay in effecting sales of these aircraft after that date, which amounted to more than nine months in the case of the planes listed in Annex F as Piston Nos. 59-75, cannot be attributed to defendants' acts. These limitations alone would reduce the damages claimed by TWA for these aircraft by \$361,641, as damages for the aircraft listed in Annex F as Piston Nos. 5-7 would be disallowed in their entirety, and the quarters of delay would be limited to 3.3 for Piston No. 48, 3.2 for Piston No. 49, and 3.67 for Piston Nos. 59-75.

L049 Aircraft

TWA claims damages of \$3,087,000, before trebling, for delay in having 31 L-049 aircraft available for sale (TWA

¹Sales of these aircraft occurred in February, March, August, and November 1959, January, February, March, June, and September 1960, and February 1961. Two of these aircraft, numbers N-40432 and N-40441, were leased to another company in November 1959 (Tr. 1749), more than six months prior to their actual retirement date in June 1960 (Annex F, p. 3).

Ex. 6B, p. 9). These are intermediate-range, four-engine airplanes. TWA's L-049 fleet, or at least "several" airplanes of it, was for sale as early as July 15, 1958 (DX 349), but none was sold before the sale of one on August 26, 1959 (TWA Ex. 6B, p. 81), and a second one was not sold until April 30, 1961 (TWA Ex. 6B, p. 83). The aircraft of this type are listed in Annex F as Piston Nos. 20, 43-47 and 76-100, where the earliest reconstructed retirement date for any of them is May 12, 1959, and the next earliest is May 5, 1960. As TWA considered these aircraft available for sale as early as July, 1958, for the reasons set forth above with respect to M-202A aircraft, TWA's claim that a delay in the availability of these aircraft for sale due to a delay in receiving jet aircraft caused the loss to TWA claimed in its proof cannot be sustained. The claim for damages with respect to having aircraft of this type available for sale is therefore disallowed.

Although TWA's offering of its aircraft of this type for sale in 1958 shows that defendants are not responsible for the delays claimed in TWA's proof with respect to L-049 aircraft, there are other reasons which would require the disallowance of TWA's claim with respect to all of these aircraft. It is undisputed that the 30 of the 31 aircraft TWA still had in 1961 were operating at stage lengths of less than 300 miles (Defendants' Brief 290, Annex F, TWA Ex. 396) and the proof shows that elimination on a large scale of such piston flights was the result of a decision having nothing to do with the acquisition of jet aircraft (Tr. 10642-43, Defendants' Brief 290). There are separate reasons why the claim with respect to a different 30 of these aircraft must be disallowed, and these 30 aircraft are the first five and the last 25 which were sold.

TWA made particular efforts to sell four aircraft of this type in March, 1959 (Ex. E Annexed to DX 324), but four aircraft of this type were not disposed of until May, 1961 (Annex F, TWA Ex. 6B, pp. 80-83). The fifth aircraft of this type to be sold, listed as Piston No. 46 and assigned a reconstructed retirement date of May 14, 1960, in Annex F, was removed from service on November 24, 1959 (Tr. 1761). As these five aircraft were available for sale prior to their reconstructed retirement dates, for the reasons set forth above with respect to M-202A aircraft, TWA's claim that a delay in the availability of these aircraft for sale due to a delay in receiving jet aircraft caused the loss to TWA claimed in its proof cannot be sustained.

The sixth aircraft of this type which was sold by TWA is listed in Annex F as Piston No. 47 where it is linked to a Convair 880 airplane with respect to which it has been determined defendants are not responsible for 60 days of the delay in acquisition.*

The proof shows that TWA would not be entitled to any damages for the remaining 25 aircraft in any event. When they were sold, the flying time after overhaul of the airframes and engines was substantially used up (TWA Ex. 421). TWA had been granted a time extension to operate the engines for 2,000 hours between overhauls (DX 354, p. 2) and for all practical purposes had used up even the additional times granted prior to selling the aircraft. Three of the aircraft were "incomplete, uncertified and non-flyable" and parts had been removed which would not be replaced (DX 354, p. 2). Three other aircraft were

*The number of quarters set forth at page 26 of TWA Ex. 6B for this aircraft, which is listed there as No. 66, is apparently incorrect, for the entire period of delay claimed of 13 months and 10 days equals 4.4 quarters rather than 4.6.

in "minimum ferry condition" and were not in "airworthy condition" (DX 354, p. 2). The remaining 19 aircraft complied with federal airworthiness directives only up to December 31, 1961 (DX 354, p. 2). Sales of "non-operating" aircraft of this type by another airline were omitted by TWA in computing the market price decline (Tr. 3773-74).

As noted above, these airplanes were made available for sale on June 21, 1961. Piston No. 47, which was sold on June 23, 1961, had over seven-eighths of its flying time after overhaul remaining for its airframes and approximately three-fourths of its flying time after overhaul remaining for its engines (Aircraft N90830 in TWA Ex. 421). In view of the proof that a complete overhaul of a four-engine aircraft costs more than \$100,000 and in view of TWA's argument that its trend lines are valid despite differences in overhaul times because airlines provide progressive maintenance and do not allow aircraft to be flown until they require a complete overhaul (Plaintiff's Brief 239) and the significance which TWA attaches to the time since overhaul in determining the value of aircraft (Tr. 1723, 3633), TWA's claim with respect to these 25 aircraft would be disallowed.

Even if all 25 airplanes had been airworthy, the difference in value between these airplanes in a completely used up condition and Piston No. 47 which was sold shortly after these planes were made available for sale is at least three-fourths of the cost of overhaul or at least \$75,000 per airplane. TWA received an average of approximately \$16,000 for each of these 25 aircraft, and the price received for Piston No. 47 (TWA Ex. 6B, p. 83) was not more than \$75,000 higher.

It should be noted that even if damages could be awarded with respect to these 25 aircraft, defendants would not be responsible for 60 days of the delay in making them available for sale because these 25 aircraft are Piston Nos. 76-100 in Annex F, the retirement of which is linked to the Convair 880 aircraft. This limitation alone would result in a diminution of TWA's damages by \$810,000 before trebling.

V.**Losses due to disruption of business.**

Plaintiff makes a separate claim for damages for disruption of its business at the time of transition to jets. It bases this claim primarily upon the following allegations of the complaint:

"53. As additional results of the offenses hereinabove alleged, TWA further has been immediately and irreparably injured in that: * * * (f) the period of disruption caused by the transition from non-jet to jet operations has been extended * * * (g) the co-ordination of the change from non-jet to jet operations has been disrupted over an extended period of time; * * * (h) the management and business of TWA has been disrupted over an extended period of time."

Plaintiff presented its detailed evidence to support this claim through the prepared testimony of Raymond F. Rowe, Staff Vice President—Transportation Training (TWA Ex. 8) and Virgil L. Walstrom, Director—Maintenance and Overhaul Planning (TWA Ex. 9). The damages are stated by these witnesses to be the direct result of defendants' activities which delayed the deliveries to the plaintiff of Convair 880s. The amount of the claim under this Section V is as follows:

(1) \$350,246 in monthly guaranteed salaries which TWA paid to 24 captains and 14 flight engineers who had to be held off schedules because the Convair 880 aircraft, for which they had been trained, had not arrived; and since there were no other aircraft available on which they were qualified to operate, TWA paid the above sum to these employees while they remained idle and "substantially unproductive" to the Airline. (TWA Ex. 8, p. 3).

(2) \$177,260 as the cost of refresher training for 62 captains, 40 first officers and 45 flight engineers. (TWA Ex. 8, p. 4).

(3) \$42,972.65 as the cost of subsequent retraining of the ground crew. (TWA Ex. 9, pp. 3-5).

These three claims total \$570,478.65, and they appear not to overlap in any way the claims reflected in the computations of Price, Waterhouse (TWA Ex. 7) or Coverdale (TWA Ex. 4).

Rowe testified that TWA's training plans at first were based on the original contract dates for delivery of the CV-880s, i.e., that deliveries were to commence in November 1959, with scheduled service to commence in March 1960. Delays in delivery ensued, however, and full scale training of flight crews did not commence until February 1960. As noted elsewhere in this opinion it was clear to the plaintiff at or about this time that deliveries would not begin until May 1960. It appears to me that the plaintiff was justified in commencing the flight training courses in February 1960, as Rowe testified, in preparation for deliveries in May.

The first CV-880 was in fact delivered in May 1960 and used for training purposes. Rowe stated (TWA Ex. 8) that "by summer of 1960, adequate flight-crews had been trained." Elsewhere in this opinion, I have concluded that commencing in May 1960 the further delays in deliveries of 880s were caused by defendants. Rowe testified, without contradiction that in the summer of 1960 flight crew training was drastically reduced because the 880s had not been delivered; co-pilots were returned to service on piston equipment; but captains and flight engineers could not be returned for such service without additional retraining;

that TWA was obligated to pay their salaries even though no 880s were available. (TWA Ex. 8, pp. 2 & 3).

Deliveries of the 880s were resumed in January 1961, by which time the flight crews required refresher training in order to be qualified under TWA standards and FAA regulations (id. p. 4). Walstrom testified that similar refresher training in December 1960 was required for ground crews. (TWA Ex. 9).

I am of the opinion that the plaintiff took reasonable steps to mitigate its losses caused by the delays in deliveries that were due to the defendants' actions.

There is set forth below certain supplementary information developed in the cross-examination of Rowe:

¶ Annex A to TWA Ex. 8 does not list all captains and flight engineers who had completed Convair training prior to the commencement of 880 revenue service in January 1961, but only those who were held off regular service flights so that they would be available to fly Convair 880s when delivered (Tr. 6594).

¶ A TWA pilot normally would fly about 750 to 800 hours a year (Tr. 6597).

¶ While a pilot is in training, the pilot does not perform regular service flight on other types of aircraft (Tr. 6599-6600). In order to qualify for scheduled flight operation, FAA regulations require that a pilot complete a proficiency check every six months on the type of equipment he is going to perform on, and also complete at least three take-offs and landings to a full stop within the last 90 days (Tr. 6601).

¶ TWA regulations for safety reasons prohibit a pilot from flying piston equipment after he has completed tran-

sition on jet equipment without transition back to the piston equipment (Tr. 6602).

¶ Training for a captain or first officer consists of three weeks of ground school, 12 to 18 hours of simulator training, 8 to 20 hours transition training on the aircraft, and then 20 hours of line time (regular commercial service with passengers) under supervision. Training for a flight engineer is the same except that he requires four weeks of ground school (Tr. 6602-6603).

¶ Because of TWA safety regulations, when a captain or flight engineer begins training on a new type of aircraft, he devotes his full time to that training and does not fly other craft even though he is otherwise qualified to fly them (Tr. 6607).

¶ The above-stated TWA regulation does not apply to first officers [co-pilots] (Tr. 6609, [6613]).

¶ TWA regulations are approved by the FAA and consequently must be complied with like any other FAA regulation (Tr. 6610-6611).

¶ In order to return to piston equipment, a captain is required to complete one hour of transition on piston aircraft and at least one ILS approach and three take-offs and landings. Then in order to return to jet aircraft again, he is required to complete two hours of transition training and three take-offs and landings with jet equipment (Tr. 6611-6612).

¶ The guaranteed salary of captains, co-pilots and flight engineers was computed on the basis of an 85 hour month even though the union contract only guaranteed salary for a 60-hour month (Tr. 6615-6616).

¶ Mr. Rowe felt that the real reason for not returning the captains and flight engineers to piston aircraft was the belief that the Convair 880s were expected momentarily and crews would be needed to serve on them. (Tr. 6626).

There is set forth below certain supplementary information developed in the cross-examination of Walstrom:

¶ About 80 hours of classroom training was necessary to qualify a ground crew mechanic for service on a Convair 880 aircraft (Tr. 6550-6551).

¶ The minimum of 80 hours training was a TWA requirement and not specifically required by the FAA (Tr. 6555-6556).

¶ The ground crew were trained mainly where they were domiciled although there was a "minor amount of travel involved" (Tr. 6556-6557).

¶ Refresher training of the ground crew would be necessary whenever the "considerable time" of three months or more had elapsed since initial training and actual contact with the airplane (Tr. 6570).

¶ TWA did not hire any additional instructors to conduct the refresher training on Convair 880s (Tr. 6573).

¶ All the refresher training listed in Annex A consisted of classroom training (Tr. 6573).

¶ Refresher training took place in lieu of regular productive work (Tr. 6574).

¶ While taking refresher training, the ground crew was not on overtime pay (Tr. 6574).

¶ Walstrom was "sure" that maintenance suffered during the period that refresher courses were given, and that "it resulted in some degree of overtime over what we would

normally have had." Walstrom guessed that "it is just axiomatic that it has to be handled in some way, the work that has to be done. And one way it can come out is overtime." (Tr. 6574-6575).

The supplementary information thus developed in cross-examination of Rowe and Walstrom supports the plaintiff's entire claim under this Section V, and accordingly said claim is allowed for the full amount of \$570,478.65.

VI.

Alternative over-all claim for damages based upon comparative profitability study.

Up to this point we have considered the plaintiff's claims for damages suffered by it as a result of specified allegations of the complaint. The plaintiff also claims under this Section VI damages "for the totality of its injuries set forth in the complaint." It claims certain additional injuries not covered by the preceding portions of this opinion as follows:

1) Injuries to TWA piston fleet, being included in the term "aircraft" in the following portion of paragraph 10 of the complaint:

"It was the intent of plaintiff and Atlas, inter alia • • •

(d) that defendants would have TWA as a captive market and would supply the requirement of TWA for aircraft, including jet-powered aircraft, upon terms advantageous to themselves;

(e) that the requirements of TWA for aircraft, including jet-powered aircraft, would be enlarged for the benefit of defendants and Atlas by various means."

Other paragraphs of the complaint cited under this heading are as follows:

"TWA has been denied the right freely to acquire aircraft necessary to its operations and has received such aircraft as were made available to it in an untimely manner (par. 50)."

"TWA has been further and immediately injured in its business • • • in that defendants have allowed TWA to procure financing essential for the acquisition of

aircraft only upon the condition that TWA would accept such aircraft as the defendants dictated, * * *." (par. 51)

2) Injuries relating to the disruption of the management and business of TWA. Under this heading plaintiff cites paragraph 53(h) of the complaint reading as follows:

"As additional results of the offenses hereinabove alleged TWA further has been immediately and irreparably injured in that * * *

(h) The management and business of TWA has been disrupted over an extended period of time."

3) Injuries relating to the disruption of the transition from non-jet to jet operations (over and above the disruption claims previously discussed above under Section V of this opinion). Under this heading the plaintiff cites paragraphs 53(f) and (g) of the complaint which were quoted above in discussion of the disruption claimed under Section V.

4) Injuries to TWA's good will (and consequent ability to attract passengers in competition with other airlines) due to the many years of victimizing of TWA by the defendants. Under this heading plaintiff cites paragraph 52(e) of the complaint which reads:

"TWA had been further injured in the following manner * * *

(e) TWA's good will in its business in serving passengers throughout the world was diminished."

This Section VI claim is presented by plaintiff as an over-all alternative claim, i.e., it includes damages incident to all of the claims discussed above in Sections I-V and

damages for the above listed four categories of additional injuries not covered by Sections I-V.

The testimony in support of this alternative over-all claim for damages was presented in the form of a very brief comparative profit study prepared by Coverdale & Colpitts. It attempted to measure the extent to which the operating profits (not net profits) earned by the plaintiff during the years 1959-1963, inclusive, fell short of such profits that plaintiff would have attained had its profits for those years been on the same level vis-a-vis certain other air carriers, as the profits earned by it during the years 1964 and 1965. The comparison used for TWA's International Division was with the Atlantic Division of Pan-Am. The comparison for TWA's Domestic Division was based upon a comparison with American Airlines, Inc. These airlines were the ones most nearly comparable in the opinion of Coverdale & Colpitts with TWA. The basis upon which the study was made was that during the years 1959-1963 the plaintiff's business was handicapped by unlawful restraints or monopolization of the defendants, whereas during the so-called base years of 1964 and 1965 the effects of the defendants' alleged illegal actions had been substantially dissipated and accordingly the profit figures for those two years represented operations when the plaintiff's business was not handicapped by unlawful restraints or monopolization. The comparative profitability study is plaintiff's Exhibit 4(b) and was prepared under the direction of Wemple and submitted as a portion of his sworn direct testimony. No study of comparative operations policies or physical facilities or service policies was made by Coverdale.

The Coverdale Report found that TWA's 1959-1963 route structure was not materially different from what it was in

1964 and 1965. It also concluded that the route structures of the Atlantic Division of Pan-Am and of American were not materially different in 1959-1963 from what they were in 1964 and 1965.

The operating profits during the base years 1964 and 1965 of TWA's Domestic and International Divisions and of the air carriers for purposes of comparison were as follows:

	1964	1965	Average
	(Millions)		
TWA International	\$34.6	\$47.6	\$41.1
TWA Domestic	50.9	49.8	50.3
PAA-Atlantic	26.1	33.7	29.9
American (Domestic)	61.2	70.9	66.1

The ratios of TWA's operating profits to those of the air carriers selected for comparison in 1964 and 1965 were as follows:

	1964-1965 Average Operating Profit (Millions)	Ratio, TWA to Other
TWA International	\$41.1	1.37
PAA-Atlantic	29.9	
TWA Domestic	\$50.3	.76
American (Domestic)	66.1	

The operating profits (losses) in each of the years 1959 through 1963 of TWA and the selected air carriers were as follows:

	1959	1960	1961	1962	1963	Total
	(Millions)					
PAA-Atlantic	\$17.5	\$16.6	\$ 4.5	\$12.5	\$33.3	\$ 84.4
American (Domestic)	24.5	24.7	19.1	19.3	43.9	131.5
TWA International	(-7.8)	17.1	(-13.5)	15.3	23.3	34.4
TWA Domestic	26.3	(-0.9)	(-24.2)	(-7.4)	17.5	11.3

Application of the TWA profit ratios determined for the base years 1964 and 1965 to the total 1959-1963 profits of the selected air carriers, establishes that TWA's profits would have been as set out below if TWA had attained a profit level comparable to that reached by TWA in 1964 and 1965:

1959-1963 Profits	1964-1965 Profit Ratio, TWA to Other TWA Profits		Calculated 1959-1963 TWA Profits
	(Millions)		(Millions)
PAA-Atlantic	\$ 84.4	1.37	\$115.6
American (Domestic)	131.5	.76	99.9

The difference between the profits calculated by this method and TWA's actual profits are as follows:

Comparison Airline	Calculated 1959-1963 TWA Profits (Millions)	Actual TWA Profits	Difference (Millions)
PAA-Atlantic	\$115.6	TWA	
American		International	\$34.4
(Domestic)	99.9	TWA Domestic	11.3
			<hr/> \$169.8

The operating profits earned by TWA's International Division in the period 1959 through 1963 were about \$81 million less than they would have been if that Division's profit, as compared with PAA-Atl., had been as high as in the years 1964 and 1965. The operating profits earned by TWA's Domestic Division in the period 1959 through 1963 were about \$89 million less than they would have been if that Division's profit, as compared with American, had been as high as in the years 1964 and 1965.

In my opinion the Coverdale comparative profit study does not provide an acceptable measure of damages in this proceeding, and I disallow the over-all claim based upon it.

The allegations in the complaint relating to it are very much less definite and certain than the specific allegations with which the claims under Sections I-V of the opinion have dealt and to a considerable extent are overlapping therewith. Under Sections I-V of this opinion, the plaintiff claims a total of approximately \$104 million and accordingly the claim for additional damages under this alternative claim amounts to an additional \$65 million of general damages based solely upon the comparative profit study.

The objections of the defendants to the basis of the study, and the validity of the comparisons made therein for the purpose for which it is sought to be used are, in the main, valid.

The fact that many of the routes of the airlines used for comparative purposes parallel those of TWA (see maps attached to the study) is in itself not a sufficient basis for indicating that comparable earnings should follow therefrom. Some additional factors required to make the comparison valid in such a complex business, all of which are missing from the study, are comparative equipment and physical facilities and a myriad of management accounting and service factors. The variance in historical load factors in earlier years between TWA and the other airlines is one reflection of the importance of these missing factors. See *Wolfe v. Nat'l Lead Co.*, 225 F. 2d 427 (9th Cir.) 1955.

Furthermore, it seems inherently invalid to raise T.W.A.'s 1959-1963 results by using the 1959-1963 levels of operating profit of American and Pan-Am. Both of these carriers actively compete with TWA on its major routes. If TWA were to have significantly increased its revenues by introducing additional jet service in 1959-1963, it is

obvious that much of the increased revenue would have represented a diversion from its major competitors, including American and Pan-Am. Since the improvement in TWA would have lowered the operating profit of its two major competitors, it would not seem proper to estimate the operating profit of reconstructed TWA on the basis of the unreduced levels of operating profit of American and Pan-Am.

It also seems to me that the two alternative methods used by Coverdale in computing damages contain significant inconsistencies (TWA Ex. 4(b) and 4(c)). In my opinion the methodology used by Coverdale in plaintiff's Exhibit 4(c) is more precise and realistic than that shown in its comparative profitability study (TWA Ex. 4(b)). At one point the following colloquy occurred during the cross-examination of Wemple (Coverdale):

"Q. Have you any opinion, Mr. Wemple, as to which between 4B and 4C represents the proper approach or the better approach to the determination of net operating profits? A. I have no opinion on that matter.

Q. In 4(c) you come out with * * * \$64 million and here you come out with \$170 million, and still you have no opinion. A. Correct." (Tr. 6139-40) (See also Tr. 6134 and Simat Def. X 271A. p. XI-1).

The plaintiff did not call any other witness to support the Comparative Profit Study.

In my opinion the evidence to support the study is conjectural. The damages awarded in respect of Section I-V of this opinion adequately reflect the totality of the plaintiff's damages. When applied to the underlying facts the Comparative Profit Study produces results which are unrealistic (Def. Brief, p. 305).

VII.

Interest on damage claim.

The plaintiff in its brief takes the position that any award should carry interest, as an exercise of the discretionary authority of the trier of the facts to include in the award a sum constituting prejudgment (or moratory) interest, which would itself be subject to trebling (Plaintiff's Brief, p. 284). It alleges that the defendants, "through skillful exercise of their rights of appeal and through vigorous and lengthy contests of TWA's damage case," have succeeded in postponing for over five years a determination of the sum that should be awarded to TWA. Furthermore, TWA asserts that failure to record the operating profits which should have been recorded in each year, 1959 through 1963, and other elements of damage, have deprived plaintiff not only of the absolute amounts, but also of the normal increment on these sums.

The defendants in their brief state that the matter of award of interest should not be covered in the Special Master's opinion on damages but should be reserved for the trial judge who passes upon the Special Master's report.

I have interpreted the order of reference to the Special Master as requiring me to express my opinion on this subject.

The first line of cases to be considered establishes the Federal rule that interest may be allowed upon unliquidated claims.

In *Miller v. Robertson*, 266 U. S. 243, 258 (1924), the court allowed interest upon unliquidated claims:

"Generally interest is not allowed upon unliquidated damages. *Mowry v. Whitney*, 14 Wall. 620, 653, 20 L. Ed. 860 (1871). But when necessary in order to arrive at fair compensation, the court in the exercise of a fair discretion may include interest or its equivalent as an element of damages."

In *Miller* the claim was capable of reduction to a specific monetary amount with a minimum degree of difficulty. There the buyer refused to accept ore and the seller sued for the difference between the contract price and the lesser price obtained when the seller resold ore after the buyer's refusal. The Supreme Court said the lower court properly allowed interest since the claim was a "debt" but suggested that such an award was within its discretion.

In *Concordia Insurance Co. v. School District No. 98*, 282 U. S. 545 (1931), the following statement appears:

"In the absence of an authoritative state decision to the contrary, there was nothing in either [statute] which required the trial court in rendering its judgment to depart from the rule in respect of the allowance of interest which this court has recognized, namely, that, even in the case of unliquidated damages, 'when necessary in order to arrive at fair compensation, the court in the exercise of its sound discretion may include interest or its equivalent as an element of damages.' (citing *Miller, supra*)" 282 U. S. at 544-545.

In *National Airlines, Inc. v. Stiles*, 268 F. 2d 400 (5th Cir. 1959) the court concluded that interest was clearly in order. The case appears to be an expansion of the doctrine insofar as it allows interest in a situation where the damage is pecuniary but not subject to close valuation. An action had been brought under the Death on the High Seas Act by the widow of a passenger who was killed when the

defendant's airplane crashed. In awarding interest, the court pointed out that a party suffering a financial loss from the death of a "breadwinner", just as from the destruction of a ship, could be adequately compensated for the loss only "if the award is made at the time of the loss or if interest for the time between loss and payment is allowed." 268 F. 2d at 405. In so holding, the court stated:

"It is quite clear that with as many uncertain factors as there are for consideration by the court in arriving at the fair value of plaintiff's pecuniary loss the length of time to the date of judgment may sometimes be taken into consideration by the court in determining the amount of its award." 268 F. 2d at 405.

After reviewing the congressional intent, the court affirmed the lower court's award stating:

"... Congress clearly did intend to provide full compensation for the loss; and . . . the courts cannot carry out this clear mandate without taking into account the inadequacy of delayed compensation." 268 F. 2d at 406.

The court pointed out that admiralty stands on a different footing from the common law regarding damages, "for the general rule in common law had traditionally been that prejudgment interest could not be allowed on an unliquidated tort claim."

Shortly after the *National Airlines* decision, a Federal case was decided which laid to rest the question of power of the Federal courts to award prejudgment interest on unliquidated claims under Federal statutes. This case, which involved the High Seas Act, was *Moore-McCormack Lines, Inc. v. Richardson*, 295 F. 2d 583 (2d Cir. 1961), *cert. denied*, 368 U. S. 989 (1962). In the *Moore-McCormack* decision, the court stated:

"Interest was never refused on unliquidated claims from any doubt that some financial loss is actually suffered from delay in receiving money. Theoretically, refusal was based on the concept that interest was payable only on a 'debt' and that no debt could be due until the liability had been fixed. (citation omitted) McCormack traces the distinction to a survival of the medieval distaste for interest as 'usurious.' (citation omitted) A further explanation sometimes advanced is that a debtor should not be burdened with prejudgment interest upon an obligation so nebulous that he must necessarily look to the courts to fix its scope. Similar considerations would, however, seem to support the disallowance of prejudgment interest where liability is in doubt as to a 'liquidated' claim. But since the courts have not seen fit to deny prejudgment interest in the latter case, we see no reason why they should not grant it in the former." 295 F. 2d at 594.

It thus appears that the Federal courts have discretionary authority to allow interest on unliquidated claims, as well as liquidated claims, in proper cases where the statute is silent as to award of interest.

Next to be considered is a series of Federal cases standing for the proposition that when a penalty is authorized by the statute, it may be improper to award interest in addition. These cases first arose under the Fair Labor Standards Act but their rule of law regarding interest was made applicable to the private antitrust field by Judge Wyzanski in *Cape Cod Food Products, Inc. v. National Cranberry Association*, 119 F. Supp. 900 (D. Mass. 1954).

Cape Cod was an action by a food products company against individuals and corporations for damages claimed to have been sustained by the plaintiff by reason of an alleged conspiracy on the part of the defendants to violate

the antitrust laws. Judge Wyzanski charged the jury as follows:

"Finally, I instruct you . . . that you are not to allow any interest of any kind. The problem of interest is one which has not yet been authoritatively settled by the Supreme Court of the United States. The ruling that I make is in accordance with the ruling of Judge Caffey in the Southern District of New York, and contrary to an earlier ruling of my own. But I am now bearing in mind a decision in the Supreme Court of the United States in connection with the Fair Labor Standards Act, 29 U. S. C. A. §201 *et seq.*, and double damages, and I have concluded that in a statute where treble damages are available, interest is not appropriately allowed. So you will please not take into account the problems of interest of any kind." 119 F. Supp. at 911.

Judge Wyzanski cites in support of his conclusion *Brooklyn Savings Bank v. O'Neil*, 324 U. S. 697 (1945).

Brooklyn Bank was an action for back wages and liquidated damages under Section 16(b) of the Fair Labor Standards Act. That aspect of *Brooklyn Bank* relevant to the situation presently under consideration centers around the court's consideration of whether an employee recovering minimum wages and liquidated damages under Section 16(b) is also entitled to interest on the sums so recovered. Mr. Justice Reed, speaking for the Court, first stated that the question of the right to interest on sums recoverable under a federal statute is a question of federal, not local, law. He then went on to disallow the interest requested and, in so doing, made the following statements at pp. 715-16:

"Interest is not recoverable in judgments obtained under §16(b). As was indicated in our decision in *Overnight*

Motor Co. v. Missel, 316 U. S. 572 (1942), §16(b) authorizes the recovery of liquidated damages as compensation for delay in payment of sums due under the Act. Since Congress has seen fit to fix the sums recoverable for delay, it is inconsistent with Congressional intent to grant recovery of interest on such sum in view of the fact that interest is customarily allowed as compensation for delay in payment. To allow an employee to recover the basic statutory wage and liquidated damages, with interest, would have the effect of giving an employee double compensation for damages arising from delay in the payment of the basic minimum wages. See *Royal Indemnity Co. v. United States*, 313 U. S. 289, 296. Allowance of interest on minimum wages and liquidated damages recoverable under §16 (b) tends to produce the undesirable result of allowing interest on interest. See *Cherokee Nation v. United States*, 270 U. S. 476, 490. Congress by enumerating the sums recoverable in an action under Section 16(b) meant to preclude recovery of interest on minimum wages and liquidated damages."

Shortly after the *Brooklyn Bank* decision, the Supreme Court applied the rule in that case to penalties incurred under the Agricultural Adjustment Act of 1938. In *Rodgers v. United States*, 332 U. S. 371 (1947), the District Court rendered judgment in favor of the Government for penalties incurred under the Act for marketing cotton in excess of farm quotas plus interest from the date the penalties became due to the date of judgment. The Circuit Court of Appeals affirmed this decision and the Supreme Court granted *certiorari*. In an opinion by Mr. Justice Black, the Supreme Court reversed the lower court's decision and denied the propriety of awarding interest.

In *Rodgers*, the petitioner produced and sold more cotton than allotted him under Part IV of the Agricultural

Adjustment Act of 1938 as amended. Stat. 31, 55-60; 55 Stat. 203; 7 U. S. C. A. §§ 1281 *et seq.* The United States instituted suit to recover money "penalties" to which non-cooperating farmers are "subject" for quota violations. Mr. Justice Black, after stating that federal law controls since the penalties are imposed under an act of Congress, said:

"Since penalties under the Agricultural Adjustment Act are imposed under an Act of Congress, they bear interest only if and to the extent such interest is required by Federal law (citations omitted). There is no language in the Agricultural Adjustment Act or in any other act of Congress which specifically allows or forbids interest on penalties such as these prior to judgment. But the failure to mention interest in statutes which create obligations has not been interpreted by this Court as manifesting an unequivocal congressional purpose that the obligation shall not bear interest. (citation omitted) For in the absence of an unequivocal prohibition of interest on such obligations, this Court has fashioned rules which granted or denied interest on particular statutory obligations by an appraisal of the congressional purpose in imposing them and in the light of general principles deemed relevant by the Court. (citation omitted)" 332 U. S. at 373.

The opinion next contains the following statements cited in the Plaintiff's brief in support of the proposition that interest should be awarded in a private antitrust action:

"As our prior cases show, a persuasive consideration in determining whether such obligations shall bear interest is the relative equities between the beneficiaries of the obligation and those upon whom it has been imposed. And this court has generally weighed these relative equities in accordance with the historic judi-

cial principle that one for whose financial advantage an obligation was assumed or imposed, and who has suffered actual money damages by another's breach of that obligation, should be fairly compensated for the loss thereby sustained." 332 U. S. at 373.

However, the actual holding of *Rodgers* undercuts the relevance of this statement to the present situation. *Rodgers*, as mentioned above, appears to be the application by the Supreme Court of the rule it established in *Brooklyn Bank*. In disallowing prejudgment interest, the Court made the following observations:

"... [W]e think that the question of interest on the penalties provided in the Agricultural Adjustment Act on non-cooperators should be governed by the rule previously applied by this Court to criminal fines. Although Congress neither wholly prohibited nor made it a crime for a farmer to market cotton in excess of his quota, still it imposed sanctions upon non-cooperators analogous to those of the criminal law. The purpose of Congress in requiring payment of penalties into the Federal Treasury for marketing above the allotted amount was not to raise revenue for the Government's financial advantage but to deter farmers from planting and marketing more than their quotas. In fact, the whole philosophy of the Agricultural Adjustment Act is based on the theory that the public will be benefited, not damaged, if farmers produce and market within these quotas, thereby avoiding the payment of penalties." 332 U. S. 374-375.

The penalties imposed by the Fair Labor Standards Act and the Agricultural Adjustment Act are analogous for the question here under consideration to those imposed by the trebling of damages in a private antitrust action. The situation in which TWA finds itself is not unlike the situa-

tion of the government in the *Rodgers* case insofar as the penalties are concerned and *Rodgers* leaves no doubt but that interest cannot run on that part of the treble damages which is the "penalty" or "deterrent factor." But, as *Rodgers* was speaking only to penalties in and of themselves, the case does not necessarily mean that interest could not run on the primary damage claim. That interest can run on this primary amount is, in fact, the contention of TWA.

In *Brooklyn Bank, supra*, the court merely stated, without severing withheld wages from liquidated damages, that "[t]o allow an employee to recover the basic statutory wage and liquidated damages, with interest, would have the effect of giving an employee double compensation for damages arising from delay in the payment of the basic minimum wages." 324 U. S. at 715. It would seem, then, that *Rodgers* did in no way qualify the *Brooklyn Bank* holding. *Rodgers* was discussing only penalties so the Court talked in terms of penalties. *Brooklyn Bank* was discussing actual damages plus liquidated damages, and the Court spoke in terms of disallowing interest on both with the suggestion that the liquidated damages had the same effect as interest insofar as the claimant was concerned. Therefore, the *Rodgers* decision seems in no way to support TWA's contention that interest should be allowed on the primary amount in the situation presently being considered.

This interpretation of *Brooklyn Bank* is borne out in *Asselta v. 149 Madison Ave. Corp.*, 95 F. Supp. 856 (S. D. N. Y. 1951). There the problem and its solution depended upon an interpretation of the effect of § 11 of the Portal-to-Portal Act of 1947, 294 U. S. C. A. § 260, on § 16(b) of the Fair Labor Standards Act, 29 U. S. C. A. § 216(b).

Under the Portal-to-Portal Act, the awarding of liquidated damages as provided in the Fair Labor Standards Act was no longer mandatory, but, by § 11, was placed within the sound discretion of the court. Judge Kaufman, in distinguishing the *Brooklyn Bank* decision, made the following observations:

"Clearly, interest on an award in which no liquidated damages were granted, such as in the present case, would not be barred by the holding in *Brooklyn Savings Bank v. O'Neil*. An analysis of the opinion in the *O'Neil* case indicates that the Court regarded the provision for liquidated damages as a substitute for interest, which, the Court said, 'is customarily allowed as compensation for delay in payment.'" 95 F. Supp. at 858.

The stage was then set for Judge Wyzanski's adoption of the Federal Rule concerning interest on penalties to private antitrust litigation where treble damages are available.

Although interest is traditionally considered compensation for delay in the payment of money rightfully due the claimant, it appears that where penalties are involved, as in the trebling of the principal amount in a private antitrust action, such penalty is conceptually in lieu of interest. TWA, in the situation presently under consideration, is not entitled to moratory interest.

VIII

Recapitulation and Final Award

The schedule below compiles the separate determinations (prior to adjustments as set forth below) made in the foregoing sections of this Report.

SUMMARY OF SEPARATE DETERMINATIONS

SECTION I *Losses in operating profits due to inadequacy of jet fleet*

	(\$ millions)
(1) International Division	22.4

(2) Domestic Division	29.3
-----------------------	------

less: adjustment with respect to earlier delivery of Convair aircraft	2.5
---	-----

26.8

49.2

less: cost of capital to effect earlier and additional purchase of jets (increase in gross interest cost)

21.6

\$27,600,000

SECTION II *Losses due to being required to
lease jets*

12.7

less: cost of capital to ef-
fect purchase of jets 7.4

 5,300,000

SECTION III *Losses connected with financing
the jets*

(1) Damages with respect to
equity financing -0-

(2) Damage with respect to debt
financing -0-

 -0-

SECTION IV *Loss due to delay in disposal of
displaced piston aircraft*

-0-

SECTION V *Loss due to disruption of business*

570,478.65

TOTAL

 \$33,470,478.65

The determination of the amount of damages in the previous sections of this Report has generally followed the separate statement of the several aspects of the over-all claim as set forth by TWA. However, these various inter-related aspects of the over-all claim were consolidated by Price Waterhouse and adjusted in connection with TWA's historical financial statements. The result of the Price Waterhouse analysis, which was put forward by plaintiff as its final claim, developed the total sum of \$104.5 million before trebling (TVA Exs. 7 and 50).

The defendants have not raised any serious question as to the Price Waterhouse analysis. Although I have not accepted some of the underlying calculations by other experts which were incorporated into the Price Waterhouse report, I do accept the basic principles of combination and adjustment. The Price Waterhouse results have been modified to incorporate the specific determinations in the foregoing sections of this Report.

In Section III of this Report I have set forth my determination that there should be no damage award with respect to financing. This determination reduces the Price Waterhouse total sum by \$32.6 million, leaving \$71.9 million. In Sections I and V I have made specific determinations which accept in part and reject in part the underlying data upon which this figure of \$71.9 million is based. These adjustments include a reduction with respect to the Domestic Division operating claim, of \$2.5 million; an increase in gross interest cost of \$29.0 million; and making no provision for any increase in proceeds with respect to the sale of piston aircraft and other property retirements.

These adjustments appear in tabular form below in the "Consolidated Statement of Award". Adopting the adjusted Price Waterhouse formulation together with the separate award for losses due to disruption of business

stated in Section V, I determine that the over-all award for damages should be \$45,870,478.65 (before trebling).

CONSOLIDATED STATEMENT OF AWARD

	(\$ millions)
A. <i>Increase in gain from operations with respect to earlier delivery, additional purchase, and owning rather than leasing jet aircraft</i>	76.8*
less: adjustment with respect to earlier delivery of Convair aircraft	2.5
	<hr/> 74.3
less: increase in proceeds relating to earlier sale of piston aircraft	-0-
less: increase in gross interest cost	29.0
	<hr/>
	\$45,300,000
B. <i>Losses connected with financing the jets</i>	
(1) Damages with respect to equity financing	-0-
(2) Damages with respect to debt financing	-0-
	-0-
C. <i>Loss due to disruption of business</i>	570,478
	<hr/>
	\$45,870,478.65

* Source: TWA Ex. 50 as amended by TWA Exs. 42 and 43 and DX 262.

On April 9, 1968, TWA moved on the record to amend its complaint to ask damages in such amount as the Special Master should find to have been established by the evidence. TWA gave written notice on May 2, 1966, of intent to make such motion at the close of the hearing, and there is no suggestion of surprise. I have determined that no amendment of the complaint is required in order to award the plaintiffs the damages hereby awarded because the previous motion of the plaintiffs to amend their complaint to increase the amount of damages sought to be recovered, as granted by Judge Metzner, was sufficiently broad to authorize the award hereby made.

Pursuant to 15 U. S. C. § 15, the damages of \$45,870,-478.65 determined above are trebled to \$137,611,435.95.

The plaintiffs' request for award of counsel fees and costs is referred to the District Court for decision.

The foregoing Report shall constitute my findings of fact and conclusions of law.

/s/ HERBERT BROWNELL
Special Master

Dated: September 21, 1968